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PACIFIC FISHERMAN

What Use
re Markets
We Have
No Fish
To Sell?

Page 1

Chums-Up
n Salmon

Page 13

How Firm
Is Price
Of Raw
Tuna?

Page 18

TUNA CLIPPERS berthed at San Diego, the Cradle of Clippers.

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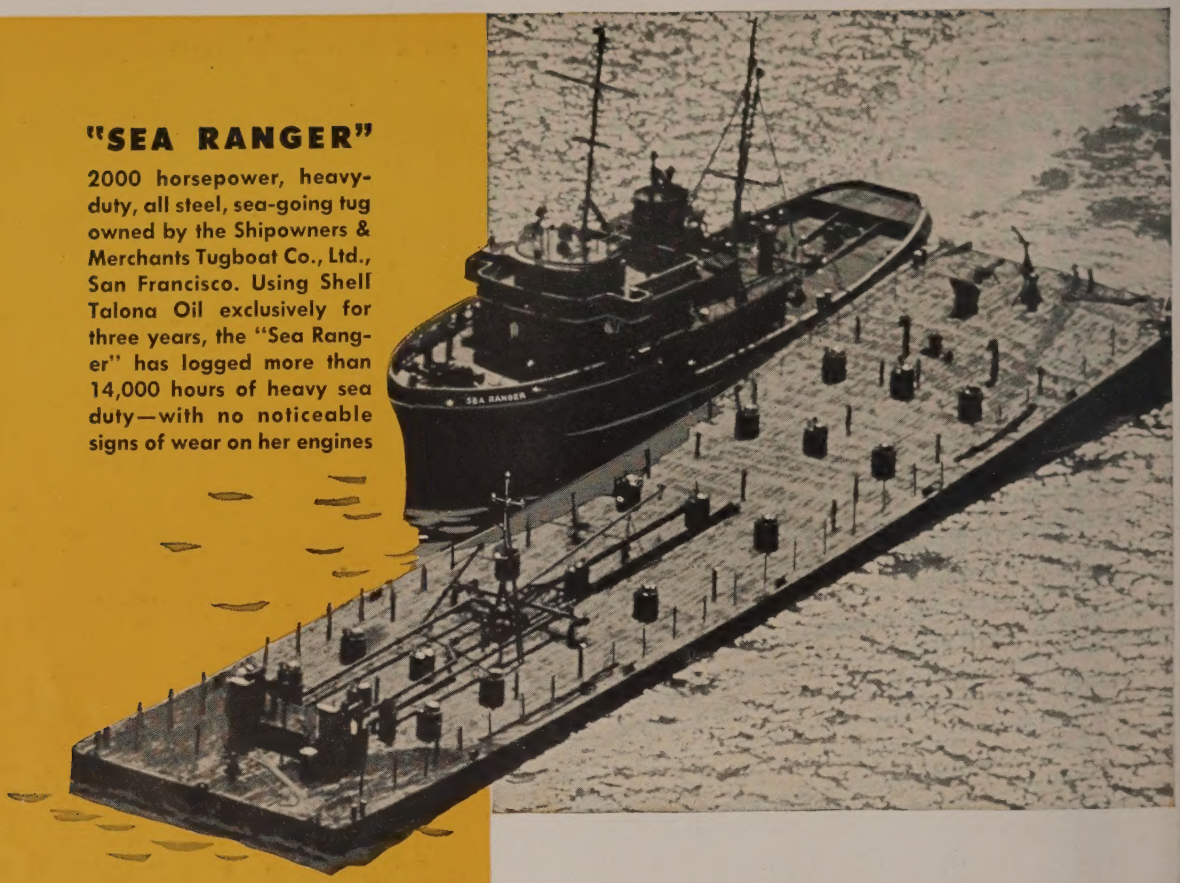

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PACIFIC FISHERMAN

September 1954 Volume 52, No. 10

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What Use Are Markets If We Have No Fish To Sell?

—A Saltonstall Fund Editorial

Spiritual breadth, honesty and intelligence of the men of the American fisheries and of the United States Fish and Wildlife Service will be put to test in the way the Saltonstall funds are applied in the next three years.

Failure of either the industry or the Service to measure-up to a high standard of objective thinking and doing will mean that the best backing the fisheries have ever received will end with the present bill, three years hence.

The Saltonstall Law provides that $3 million dollars annually be made available out of the import duties on fishery products for "a fishery educational service and fishery technological, biological and related research problems;" and "to develop and increase markets for fishery products of domestic origin; and to conduct any biological, technological or other research pertaining to American fisheries."

Even before the bill was signed forces were contending for the Saltonstall funds. Regional, industrial, bureaucratic, scientific, technological, merchandising, and political interests seek preferment—in allocation of funds, in designation of projects, in positions on the advisory board.

Allocation should be on the basis of *need*—and there is need enough in the fisheries today.

Designation should be on the basis of the *value* of the projects to the American people and their fishery resources.

Which do we need most: a knowledge of fish, or of markets in which to sell them?

We can always buy advertising, and with it can build markets; but if we have not fish to sell the markets are of no avail.

The truth is that some of our fisheries are in serious condition, largely through our lack of knowledge of basic biology and of how our resources can be protected against destruction.

When the industry and the Service three years hence come to an accounting of their Saltonstall stewardship, the money spent for sound scientific research to broaden human knowledge and protect our fishery resources can be accounted for with pride.

Not so the pork-barrell projects.

Fishery science lies largely in the sphere of government research. By the very nature of the problem, which must be pursued in international waters, it demands just such attack as the Saltonstall fund makes possible.

If, in response to selfish and subjective forces, these funds are squandered while the resource dwindles, how can we defend our work?

What good are markets if we have not fish to sell?

INPACFISH Advisory Committee

American Section of the International North Pacific Fisheries Commission Aug. 12 announced its advisory committee as follows:

C. L. Anderson, Alaska Fisheries director; *W. C. Arnold,* Alaska Salmon Industry; *V. E. Brock,* Hawaii fish director; *H. F. Cary,* manager, American Tunaboat Assn.; *R. S. Croker,* Calif. marine fisheries chief; *Larry Fitzpatrick,* Juneau vessel owner; *Miller Freeman,* President, Pacific Fisherman; *M. T. Hoy,* Oregon fish director;

George Johansen, Alaska Fishermen's Union; *R. C. Kallenberg,* fisherman, Dillingham; *D. P. Loker,* Star-Kist Foods, Inc.; *H. E. Lokken,* manager, Fishing Vessel Owners Assn.; *T. F. Sandoz,* Columbia River Packers Assn.; *R. J. Schoettler,* Washington fisheries director; *Lowell Wakefield,* Wakefield's Deep Sea Trawlers, Inc.; *James Waugh,* Cannery Workers Union of the Pacific.

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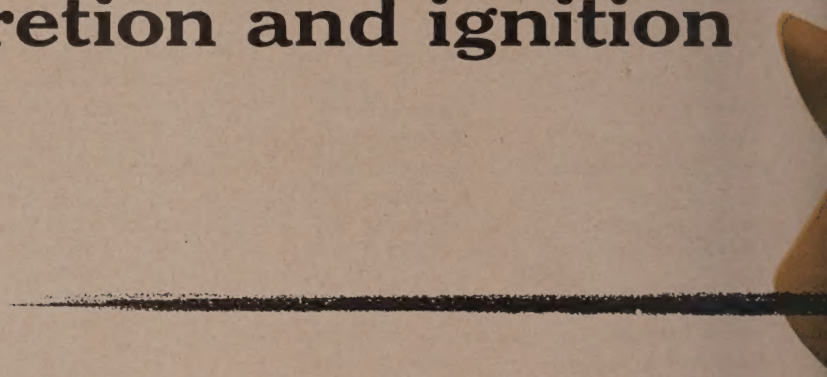

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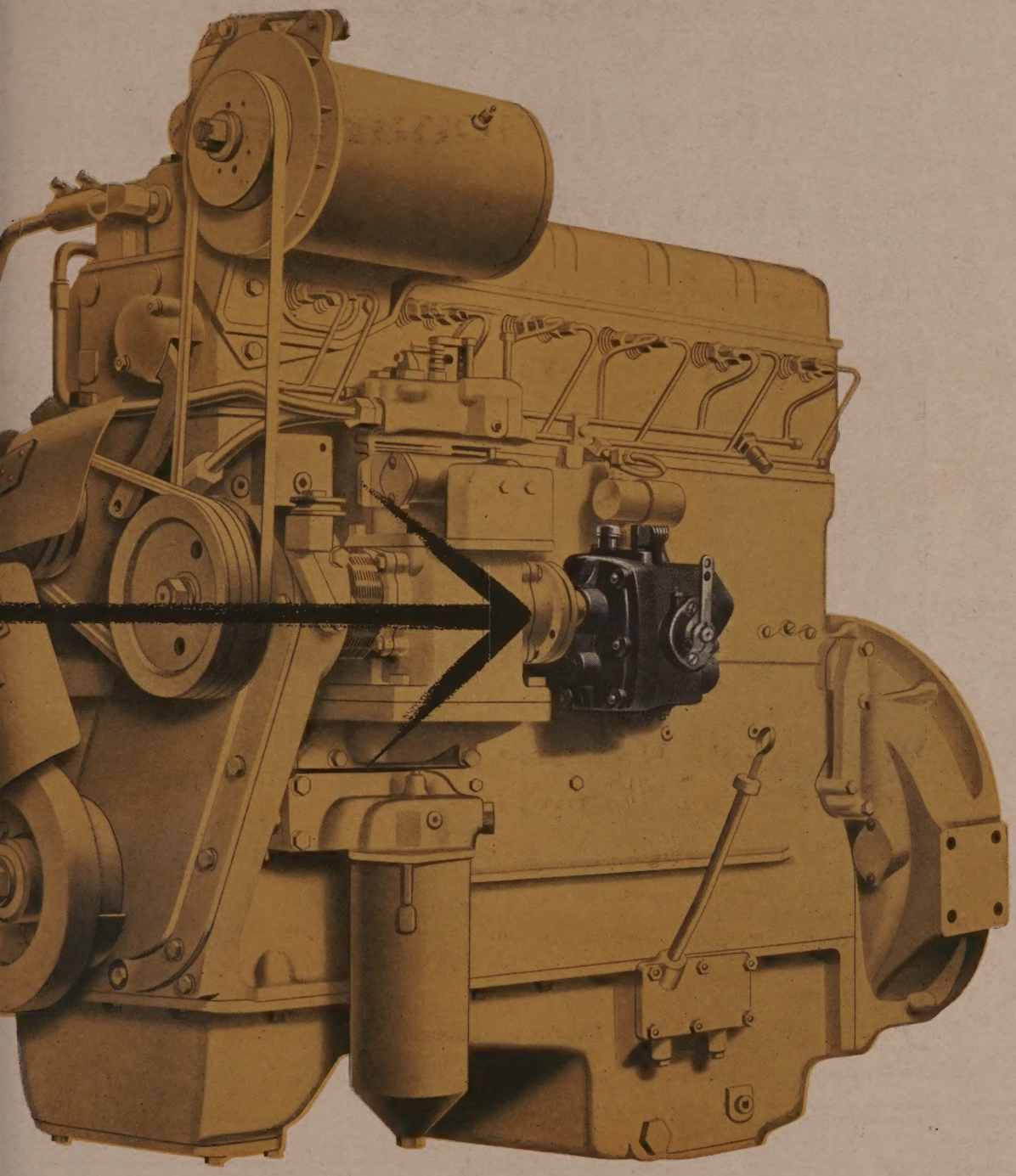

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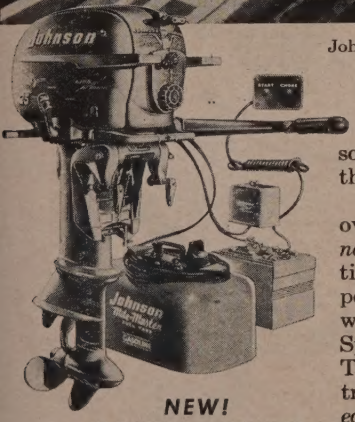

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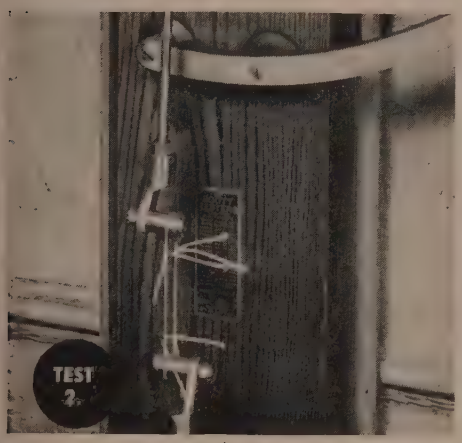

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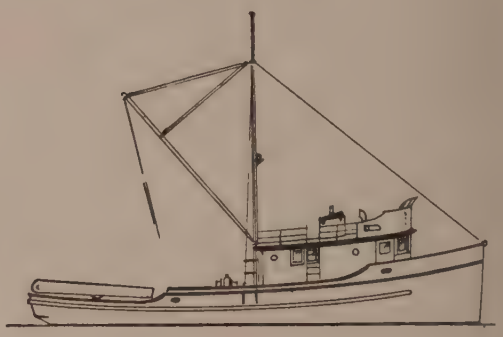

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PACIFIC FISHERMAN SEPTEMBER 1954

Chums-Up in 1954 Salmon Pack

Alaska Reds Decline in Production

Year Marked by Its Swift Surprises

Reds were sure to be short, and Chums abundant, as this issue of *Pacific Fisherman* went to press in the middle of a salmon season which had proven unusually variable, and freighted with surprise to a degree exceptional even in so volatile a business as Alaska salmon canning.

Pink packing was still underway, but with prospects deteriorating from what had been a brave and encouraging beginning.

The abundance of Chums in virtually all districts—including the high-seas operations of the Japanese—was perhaps the outstanding feature of the season as it neared its close.

Dismal decline of the Kvichak run on Bristol Bay provided the tragedy for the Alaska salmon drama of 1954.

BRISTOL BAY—Overall production of less than 350,000 cases of all species—plus the to-be-canned freezer-fish—was a bitter disappointment. Few salmon men expected even a fair run on the Bay, but any who went north counted on a better yield than occurred.

Greatest disappointment of course was in the Naknek-Kvichak catch—and particularly in the Kvichak portion thereof. With the operation of *nine canneries* concentrated into three plants, only 150,000 cases were produced. Anticipation counted upon just about twice this total.

The three other districts on Bristol Bay did better—Ugashik fantastically well. With only one cannery—Wingard—operating there, a pack of 93,000 cases was produced, 90,000 cases being Reds.

Freezerships working the Bay—six in number—had better fortune than the shore plants as a whole. This was due to the fact that they could concentrate their operations in the Ugashik and Egegik vicinities when it became apparent that the best runs were there. At presstime the pack of the freezers was not known definitely, but it was believed to be sufficient to produce 60,000 to 70,000 cases.

Escapement data for Bristol Bay streams shows a mixed trend on early report. It must be recognized that definite information was available at presstime only for those streams on which the Fish and Wildlife Service operates counting weirs. On other streams early data is inconclusive. The Naknek escapment counted through the weir was excellent; so good in fact that some observers consider it excessive. Seeding of the neighboring Kvichak, on the other hand, is believed to have been as poor as the run, giving rise to serious concern for Kvichak population, which for years has been

Japanese More Than Double Last Year's Catch

JAPANESE operations on the high seas along the Pacific-Bering contact westward from Kiska were highly productive. Last advices received by *Pacific Fisherman* from its correspondent in Japan covered the catch of the Japanese fleet to July 25, when it was 14,605,649 fish.

Species division of the Japanese catch to July 25 was:

Reds	3,197,778
Chums	8,327,681
Kings	34,445
Silvers	231,142
Pinks	2.814.603
Total	14,605,649

"Target" set for the operation in advance of the season was: Reds, 3,310,000; Chums, 4,812,200; Silvers, 548,100; Pinks, 6,073,500; Total, 14,743,000.

It will be noted that by July 25, with operations still continuing, the Japanese expeditions were right up to their target. Moreover, the catch of Reds was a perfect bullseye.

The Chums fooled them, as they fooled everyone else this year, and made-up nicely for the stortage in Pinks. Volumewise, swapping a Chum for a Pink is mighty good business.

At the time of writing, our Japanese correspondent reported that the Japanese operations were well to the westward, apparently close to the western boundary line set for them. This runs parallel to the Kamchatka coast about 40 miles offshore.

He also reported that the catch of Silvers had "markedly increased," which leads to the expectation that final figures will see the catch of this category close to the target figure.

No quantitative data is available at this time as to the Japanese pack by the various methods. All Reds, and probably all Pinks, are believed to have been canned. On the other hand, it is believed that the Chums largely are lightly salted and carried under refrigeration for disposal in the domestic market.

the backbone of the Bristol Bay salmon resource.

Stream flow in the Bristol Bay region was reported extremely low this summer, which may have adverse effect upon the productivity of the escapement by rendering spawning beds inaccessible.

KODIAK ISLAND—Although this district's pack of Reds was low, strong run of Pinks going into August made Kodiak rallying point for the optimistic—and for some transient gear as well.

Arrival of some of the Bristol Bay freezerships, intent on topping-off their loads with Pinks from the Kodiak run, generally was credited with bringing about an extra two-day closure at the end of the first week in August. Save for this interruption, the situation in the island area was generally regarded as good.

Relative strength of the salmon population in Kodiak waters permitted more fishing time this year, and exempted the area from the application of the strong Farley Prescription for ailing salmon runs.

COOK INLET — This surprising area continues to resist the downward plunge of production which was predicted for it before this as result of the staggering increase of gear which flocked to the Inlet following the war.

Production held-up high this year —due in part to the abundance of Chums, that's true. The good yield, however, is not attributed by those close to the picture to further increase in the quantity of gear run. Despite the fact that the Service abandoned its program for limiting gear on the Inlet this season, the only increase of any consequence at all was in setnets.

Reds ran fair in volume, although slightly below the good yield of the cycle year.

Cook Inlet always seems to generate controversy, and this season was no exception. The friction arose between set-netters and trappers over the question of spacing between gear, and who was there first. Federal counsel was inclined to feel that both units should be closed in such a conflict, thereby producing a situation which may have to be threshed out in the courts.

PRINCE WILLIAM SOUND—Escapement to the streams of this virtually-closed area gave the greatest encouragement to those concerned with its conservation and future production. Aerial observations from time-to-time during the course of the run demonstrated to trained spawning surveyors that the escapment to the

A. W. H. NEEDLER, new director of the Pacific Biological Station, Nanaimo, B. C. Dr. Needler is a member of the International North Pacific Fisheries Commission Biological and Research Committee.

streams was many, many times that of the previous year.

No quantitative figures are available at this time, but aerial surveys indicate an altogether satisfactory number of salmon passed to the spawning gravels of the Sound streams.

SOUTHEAST ALASKA — The great early Chum run in the northern section, which saw a quarter-million cases of excellent Chums packed before fishing in these waters has opened in recent years, was the prime feature of the Panhandle.

Pinks failed to come-up to early promise and the Eastern and Western districts were closed a week ahead of the season's normal end to protect the escapement of this species.

The Pink run of Southeast Alaska generally was a flop, save for the excellent early run in the Anan Creek section of the Sumner Strait district.

This Anan Creek fish, appearing in the July 24 statistical reports in the districts where it was canned, gave rise to early assumptions of bonanza which were not fully founded. In the midst of this flush of optimism, one experienced observer warned: "Anan Creek is not Southeast Alaska." To presstime, events indicated he was very right indeed.

Testimony from Southeast Alaska at time of writing was to this effect: Trap catches have been relatively poor, compared with purse seine production. Closure of half the traps in the area would reduce the total taken by this gear, of course; but reports indicate that the catch *per trap* also is off in comparison with purse seine production. Canneries dependant altogether on trap fish appeared to fare much worse during the first two-thirds of the Southeast Alaska season at least.

BRITISH COLUMBIA — Salmon operations in Canada came to a sudden halt Aug. 8 when the tendermen struck and the fishing unions, supporting them, branded all salmon "hot."

Prior to suspension of fishing by the strike, production in British Columbia had been slow for all varieties, with the yield only about three-fifths of that for the three previous years to comparable dates.

Granted that the last three years had been good ones; and that 1954 results were comparable with those of 1949 and 1950 to early August, the fact remains that the scant catch was a bitter disappointment, particularly in the case of Sockeyes, the pack of which to Aug. 1 was less than half that to even date last year.

With the strike falling in mid-season, when fish were to be expected all along the line, its effect was particularly grim.

PUGET SOUND—Half-a-million Sockeyes had been caught by American fishermen this summer before the Fraser River season had opened in the cycle year 1950, and only 1,000 fish had been taken to even date in 1946, two cycles back.

That's some indication of how the early-season Sockeye runs have been builtup. Moreover, the experience of the American fishermen is pretty closely matched by their Canadian cousins.

At presstime the two national fleets were running neck-and-neck, and the International Sockeye Commission was trying hard to keep them so.

Up to July 25 the Americans were well ahead, leading the Canadians by about 140,000 fish, almost as many as B. C. had caught to that date. A special closure of fishing for Americans only helped a little, but it wasn't until a week later that the score was evened, perhaps as result of the closure, perhaps not. Anyway, in a single day—August 2—the Canadians took 148,000 Sockeyes while the Americans were catching 30,000.

As this was written there was no reason to modify early optimistic forecasts for the Adams River run and its effect upon the Fraser River fishery as a whole. Writing in *Pacific Fisherman* for May, 1954, Page 16, Loyd Royal, director of the Sockeye Commission work said: "The all-important Adams River run should reach its peak in the U. S. fishery between August 20 and 27." He did not forecast directly what that peak would be, but the 1950 escapement of 1,298,000 Sockeye to the Adams was rated "Excellent".

"It's all over my head. All I know is that this same boat has gone over here for years—but never at that speed nor with that kind of load . . . and all because of something called Re-Powered with O-P."

You may have missed this particular conversation in your waters, but chances are that you'll hear . . . "Re-Powered with O-P" many times along the waterfront in months to come.

This new marine Opposed-Piston engine was designed especially for putting more power . . . more performance in your engine space. All accessories . . . lube oil cooler, filters, pumps, heat exchanger and attendant piping are engine mounted. You need only run in raw water lines and fuel line to your power hold space—and you have a complete, compact power package.

Add reliability of Opposed-Piston design *proved* by more than 5 million installed horsepower in all industry, and you'll agree that your next move is to your telephone to call your nearby Fairbanks-Morse Marine Specialist. Or write Fairbanks, Morse & Co., Chicago 5, Illinois.

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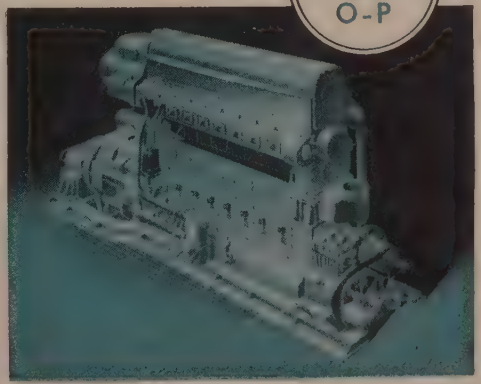

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PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • FARM MACHINERY • MAGNETOS

On the same page of our May number Mr. Royal predicted: "The July catch should be substantially larger than that taken in July of the last cycle-year during which there was a July fishery (1942), when the total catch for both countries to Aug. 1 was 290,000 Sockeye.'

The actual catch through July, this year, was 848,368 Sockeye, which is "substantially larger" than 290,000 even in the restrained lexicon of the biologist.

COLUMBIA RIVER production to the end of the summer season the middle of July was very close to the average of the four previous years to that date. This statement is based on examination of the pack figures of all the principal Columbia River operators to the end of the season in July. While some were down a bit, others were up, and the total could not have deviated far from the River average for the four years of the cycle.

Following the re-opening of fishing at the end of July, and up to time of writing at the deadline for this issue, fishing had been light. This also follows the pattern of recent years at least, leading to the generalized expectation that the pack for the year would not depart greatly from the figures of recent seasons.

Ocean-caught Cohoes in some volume were delivered at mid-Oregon points late in July and served to keep several of the canneries in operation at least part of the time during the late July closure.

How Much Canned Tuna?

7 Months Output Estimated 5.5 Million Cases, 22% Over 1953

California's tuna industry had forged 1,000,000 cases ahead of 1953 for seven months' packing activity. Pack in round figures to August, 4,500,000 cases for 1953; 5,500,000 for 1954.

In gross weight of fish this represented 104,000 tons, January through July last year; 117,000 tons this year to August 1. July itself had been estimated to be considerably more than July '53 in tonnage, but it fell quite short: 27,000 tons against last July's 32,000 tons. The July pack was 1,384,000 cases compared to last July's 1,435,844 for all of the state.

Included in above figures are the raw imports from Japan and Latin America. These totaled for all of California in July just around 7000 tons! Thus—and with the domestic Albacore boats in full activity—the California fleets of clippers, seiners and Longfin vessels, accounted for 20,000 tons. Last year, of the 32,000 tons delivered from all sources, the domestic fleets flumed 24,000 tons.

Despite reports the Southern California Albacore fleet of probably 1000 boats was running behind last year to August 1, figures at that time indicated the small boats were slightly ahead. To end of July—and with the season beginning around July 4—the local vessels had delivered 3,300 tons; whereas last July was only 3,000 tons.

Albacore price was stabilized at $410 retroactive to beginning of the season, when most boats sailed on open ticket, many receiving only $400 per ton to begin, but receiving the $10 increase later.

Imports of raw frozen tuna into California continued to climb steeply in July, when outsiders expected some drop. The total of 3,000 tons of Albacore for the month was a surprise, but probably not to canners. Other imports from Japan and Latin America were: Yellowfin, 1,533 tons; Skipjack,, 1,865 tons; and 104 tons, Bluefin (this being actually domestic fish, but imported across the Mexican border.)

One of the unexpected turn of events is the Bluefin catch. To August 14,428 tons had been delivered by seiners, almost as much as for all of 1953, and more than twice as much as for all of '52.

The seiners were finding the Bluefin, in association with Yellowfin about two-thirds down Lower California's west coast. During July the net vessel brailed 2,985 tons Bluefin, most of it at Los Angeles harbor.

Japanese and Freezerships Discuss Samoan Tuna Trade

Extension of the practice of Japanese long-line and bait-boats delivering tuna to American freezerships is expected in Japan as a result of conferences held there this summer between Toshimaru Yokoyama, president of the Japan Federation of Tuna and Bonito Fisheries Cooperative Associations, and Robert Breskovich of Tacoma, representing a group of American freezerships.

Mr. Yokoyama is also chairman of the Japan Tuna and Bonito Fishery Operators Society. The Tokyo correspondent of *Pacific Fisherman*, interviewing him late in July, quotes him as saying:

"If this scheme of having Japanese medium-sized tuna fishing boats operate in southern Pacific Ocean areas with a base at Samoa on a free-port status becomes effective, it will provide for most welcome employment of these vessels on a sound economic basis. They would sell their catches at Samoa to American freezerships."

A somewhat similar operation was conducted during the spring of this year under a contract between the Van Camp Sea Food Co., operating the cannery at Samoa, and Tokyo Suisan Shinko K. K. Late in the summer a few small-sized Japanese fishing boats were reported still at Samoa in this service.

At the time of the interview with Mr. Yokoyama, he was negotiating with Mr. Breskovich on the specific terms of a contract which would effectuate the general program under discussion.

Office Manager Dies

Robert A. Kaarle, 36, office manager of the Union Fishermen's Cooperative Packing Co., Astoria, died in a Portland hospital recently after a brief illness.

Nelson Crab Outfit Enters Alaska Area

Nelson Crab & Oyster Co., Tokeland, Wash., is reported to have entered the Alaska crab canning field this summer, utilizing the facilities installed at Cordova by the Halferty interests when they entered crab canning temporarily some seasons back.

The Nelson plant at the entrance to Willapa Harbor is one of the principal producing factors in crab canning on the Pacific.

Sandoz on Oregon Board

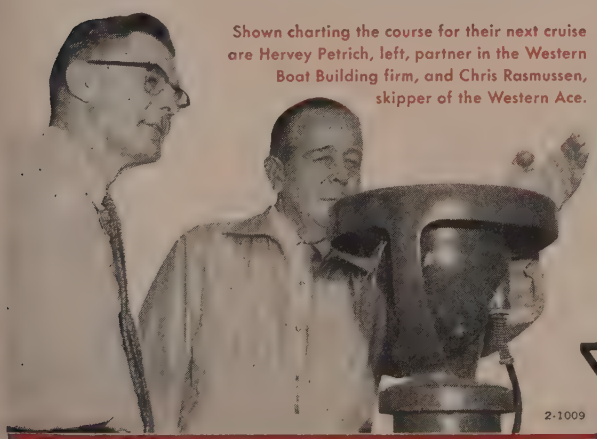
T. F. Sandoz, president of the Columbia River Packers Association, Inc., was named in August a member of the Oregon Industrial Development Commission by Governor Paul Patterson, who said Mr. Sandoz would represent the food producing industries of the state.

Western Fleet Relies on Gargoyle Marine Oils for

ALL-POINTS PROTECTION

North, south, east or west—wherever vessels of the Western Boat Building Company sail in quest of fish—you'll find Gargoyle Marine Oils protecting their costly engines.

One of the top ships in this mighty fleet, the Western Ace, pulled into the Fisherman's Marine Co. dock at San Diego recently with 550 tons of tuna for the Van Camp Seafood Company, following a lengthy cruise in South American waters. A million-dollar vessel, the Western Ace sailed almost 15,000 miles on her latest voyage.



Shown charting the course for their next cruise are Hervey Petrich, left, partner in the Western Boat Building firm, and Chris Rasmussen, skipper of the Western Ace.

Hervey M. Petrich, partner in the Western Boat Building firm, says "On long, tough trips like ours we've found you can't beat Gargoyle Marine Oils for absolute engine protection... we've been using Flying Red Horse products continually since 1938 because we know they're the best!"

It's the same story with fishing boat operators all over the world with more of them choosing Gargoyle than any other brand of marine oil. Visit the friendly General Petroleum marine distributor at the sign of the Flying Red Horse the next time you pull into port for the tops in products *and* service!

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How "Firm" is Price of Raw Tuna

Fishermen Protest $30 Cut-Back and Accept it as "Partial Payment" Only

In early August Southern California tuna vessel owners were unloading their catches at San Diego and Los Angeles, but none of them were accepting the canners' newly-announced $30 per ton cut for Yellowfin, Bluefin and Skipjack. They were taking the prices of $320 per ton, Yellowfin and Bluefin, and $310, Skipjack as "partial" payment only.

"We'll probably settle the price problem in court," declared John Real, manager, Fishermen's Cooperative Association of San Pedro, and this opinion was shared by Harold F. Cary, general manager, American Tuna Boat Association, San Diego.

The way this started was, on July 26, Van Camp and Star Kist sent wires to the associations and vessel owners saying that, effective at midnight, July 27, raw tuna would be paid for at the "1953 contract price," which was as above. The canners asked this be by "mutual agreement."

However, the owners declared they had a firm, signed contract with the packers for 1954, calling for $350 per ton, Yellowfin; $310, Skipjack, and they had no intention of settling for less.

They did though, through the associations, begin talks with the canners, looking toward a "tentative qualified agreement," that might have resulted in a compromise in price. Then, the owners say, the canners abruptly broke off negotiations, making an arbitrary demand the owners accede to the lower price. The owners said nothing doing, and there the matter rested at presstime.

To save their vessels from becoming refrigerated storage warehouses, the owners, on advice from their cooperatives, consented to unloaded their catches, taking the $320-$280 per ton, as "partial" payment.

The vessels owners declared the demand by canners to reduce the agreed price for 1954 by $30 violated all rules of bargaining and that, if they agreed, any contract signed in the future between them and the packers would be worthless. Opinion seemed to be though, along the waterfronts, was that somewhere along the line a price compromise might be reached, to go along with packers' contention retail prices must be dropped to meet ever-increasing competition from meat, poultry, etc.

Alaska Herring Fishing Reaches Surprising Heights

Herring fishing in Alaska this summer proved surprisingly good after many lean years.

The two Southeast Alaska plants—Storfold & Grondahl and Buchanan & Heinen—closed before Aug. 1 with their quotas filled. The area quota had been set at 50,000 bbls., and this was taken very early in the season, with Port Armstrong reported as having about two-thirds of the catch.

Not only was the catch good while the quota lasted, but the fish were exceptionally fat, sometimes oiling more than 7 gals. per bbl. The average for the entire season was understood to be 6-plus gals., which is as good if not better than any average ever recorded in that area.

In Prince William Sound, where only one plant—Port Oceanic—is operating, the summer run of herring was exceptionally good, the curtailed operation having in excess of 75,000 bbls. at presstime. At that time they were still in summer herring. Whether the fall run which formerly characterized the P.W.S. fishery will appear later was uncertain at time of writing.

What Soviet Union Offers Japanese by Way of Bait

Communist ideas as to territorial waters and the fisheries were clarified by the Soviet government to a party of Japanese Diet members who visited Moscow this summer without formal approval of the Japanese government.

According to a late-July letter from these junketing Japanese Diet members to the secretary-general of a Communist Chinese-Japanese "Confabulation Society," the Japanese delegation had a two-hour conference with Soviet Vice Foreign Minister Vishinsky, and that he made it clear that.

"1. The Soviet Union desires to establish a normal trade relation and interchange of culture with Japan before the restoration of diplomatic relations, which is also desired;

"2. The Soviet Union would let a competent agency participate in joint research so protective regulations might be developed for the fish resources;

"3. The Soviet Union employs the 12-mile theory of the high seas so far as activity of Japanese fishing vessels is concerned; although other theories, including the 3-mile-limit, are also applicable under some conditions. If a 'defense line' outside of territorial waters should be set forth and promulgated on the basis of international law, such a defense line should be recognized.

"4. The Soviet Union is willing to go into a detailed agreement on the matter of refuge and rescue for Japanese fishing boats working between Hokkaido and Habomai Island.

"5 It is a matter of course that any Japanese fishing vessel which drifted into Soviet territorial waters because of storm will have full rights."

The Japanese Diet members proceeded to Peking after leaving Moscow, and expected to discuss the problem of seizure of Japanese fishing boats with the Chinese Communist authorities.

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Practical ideas to increase sales volume and profits on canned foods

With thousands of other food and non-food items to handle, supermarket operators don't always have time to give high-volume canned foods proper attention. So Continental has gone to work for them. We're searching the country for better ways of handling, storing and selling canned foods.

Our new *Canned Foods Merchandiser* will bring the grocery trade simple, workable ideas every month. We're supplementing it with a complete monthly workbook, mailed direct to the operators. We're going to help sell your canned foods where they must be sold—*in the stores!*

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We can't sell you just one. We will sell you 30 to 255 "horses" at the lowest pric you can buy diesel power: $16.32 a horsepower for the 6-cylinder model.

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Buyers no longer ask *whether* diesel but *which* diesel. Which will deliver the mos horsepower for the money? The most horsepower per pound of weight? Whic is the easiest to service?

All three questions have one answer: *the P&H Diesel.*

P&H Diesel Engine Division, Harnischfeger Corporation, Crystal Lake, Ill.

Horsepower: 30 to 255. Two-cycle, 2, 3, 4, 6-cylinder models. Speeds to 1800 rpm. Stationary, mobile, marine. Diesel-generator sets.

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lowest price per horsepower . . .
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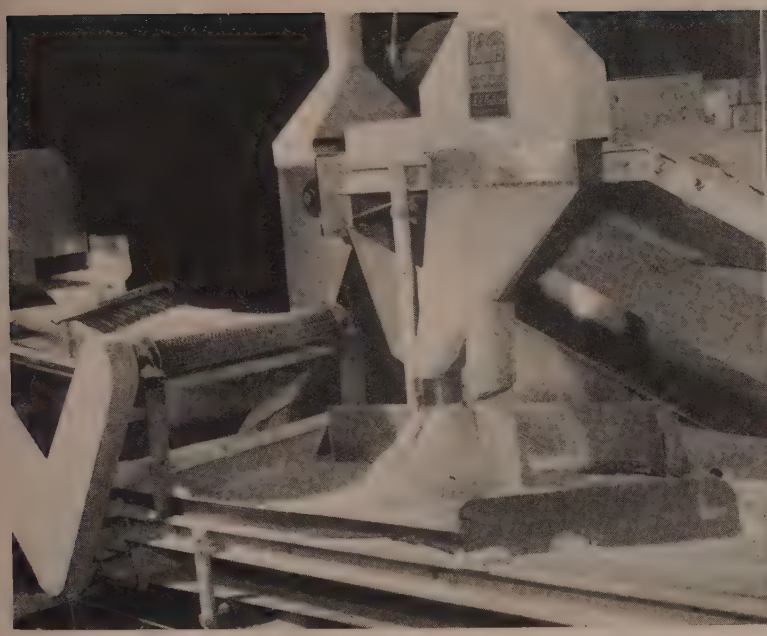


BATTER AND BREADING—Sticks emerge from batter at left and are then breaded.

BREADED EXIT — Lightly breaded sticks leave machine.

Fish Stix Biz a-Buzz

Bumble Bee Brand Enters Field

BLUE DOMINATES, with brand name in red, in this handsome Western Waxed Paper wrapper; background is light blue, type dark blue.

● Buzzing in fish stick field of the Pacific fisheries probably is occasioned by *Bumble Bee*, which flew in this summer with plant, standards, know-how and merchandising enthusiasm typical of the Columbia River Packers Association approach to fish production, packing, and selling.

Climaxing months of technological and merchandising research, the C.R.P.A. moved vigorously this year into fish sticks packing and selling. "Our plant is not the biggest, but it's planned for expansion", explains T. F. Sandoz, president of the company, which stands among the largest American packers of both salmon and tuna. "Our present enterprise isn't the biggest in the business, but we believe it is equipped with the best. Our sales program began in Portland, moved into Spokane, and then into Seattle. Learning as we go, and building on what we learn, we expect to be selling *Bumble Bee* fish sticks in the most important markets of the country."

NEW STICK PLANT operates as a division of the C.R.P.A.'s great "Hanthorn" cold storage at Astoria, Ore., the company's headquarters. This freezer—one of the largest company freezers in the entire field of the American fisheries—has an extensive and wholly modern packaged fish division where the fish are filleted

SELLING AT THE TOP—Fred S. Sandoz, C. R. P. A. sales manager, convinces Oregon's Governor Patterson.

FISH STICKS STAFF—Leland Canessa, superintendent, right, and John Supple, foreman, by Amerio plate freezer.

and prepared for the stick plant, which is located in immediate connection.

It might be mentioned that Astoria —first American settlement on the Pacific Slope—is located within 12 miles of the open sea, and trawl fish are delivered at the plants there within hours after they leave the water.

BARS, NOT BLOCKS—First distinctive feature of *Bumble Fee* fish sticks is the size and shape in which the fillets are frozen for sticking.

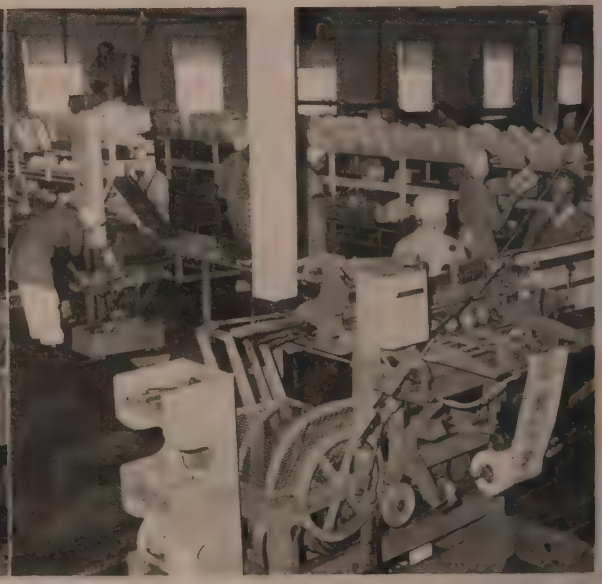
As the fillets of cod are cut for use in the stick plant, deft women "laminate" them in long, shallow, stainless steel trays, 21" long by 4" wide by 1" deep. These trays are in sharp contrast with the blocks of frozen fish from which many sticks are cut.

These trays are then placed between the plates of one of the plant's two modern plate freezers—again a distinction as compared with sharp or blast freezing of blocks. Pressure of the refrigerated plates on the covers of each individual tray expells air and gives a smooth, compact surface.

SAWING and BREADING—Bars for sticks, withdrawn from storage, are stacked two-high and cut on a bandsaw. As the thickness of the frozen bars exactly equals the width of one finished fish stick, there are never more than two sawn faces out of the six on any individual stick.

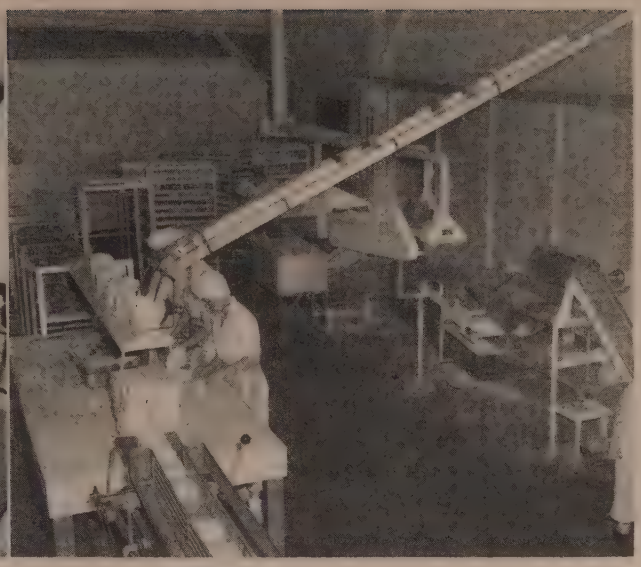
As they come from the saw, the sticks slip by gravity to a stainless steel elevating belt which takes them through a batter dip and then delivers them to the belts of a Harrison-Robins breading machine. The dip is regulated to coat the sticks but lightly with batter. Subsequent breading with *Dowynflake*, special breading material manufactured by the Doughnut Cor-

BARS, NOT BLOCKS—This is one feature of the product. Fillets are frozen in shallow pans.



PACKING AND WRAPPING—General view in the C. R. P. A. packaging plant in Hanthorn freezer.

FRYING — Time and temperature are precisely controlled. Oil is constantly filtered and tested.



FISH STICKS LINE with sticks entering at the right for breaking, drying, frying and packaging.

poration of America, gives a light coating of high quality formulation which includes bread crumbs, wheat, corn and soya flours, non-fat dry milk solids, salt, dried egg yolk, monosodium glutamate and salt.

The sawing and breading sections of the process occupy one arm of the U-shaped fish stick line. The breaded sticks are conditioned as they pass across the bottom of the U to the final steps in the process.

FRYING and PACKAGING—The breaded sticks are distributed in a single layer on stainless steel screens travelling by conveyor to the frying department, where they are cooked for 90 seconds at 375°.

Frying medium is *Keap*, a product of Wesson Oil & Snowdrift specially formulated for frying foods. Meticulous technical control is maintained on the frying oil and it is tested daily for free fatty acid content. Oil is discarded when tests show f.f.a. approaching 1%, which is considered far below the level where any tendency toward oxidation is accelerated.

The extreme attention given the quality of the frying medium, together with the cartons and wrapping, and the low storage temperature maintained, is all a part of the C.R.P.A. program for protecting the quality of its fish sticks in storage and the normal merchandising of frozen foods.

Moving from the fryer, the sticks are cooled on the screens and then are packaged immediately, eight sticks to the 10-oz. waxed white container from Fibreboard Products. This is an ingenious locking carton which is closed and wrapped in one of the plant's several Hayssen wrapping machines, which applies a handsome *Glosseal* waxed paper label in four colors, manufactured by the Western Waxed Paper division of the Crown Zellerbach Corporation.

LABEL and SELLING—The label for *Bumble Bee* fish sticks has a bright blue background, with *Bumble Bee* blazing out in red wherever the brand name is used. Most other text is in dark blue; and the main box-top panel and price spot is superimposed on a beautiful natural color photograph of a plate of ready-fried fish sticks.

The sparkling character of the package is matched by the sales campaign that launched it. Fred S. Sandoz, C.R.P.A. sales manager, working with T. Bryce Spruill, vice president, Botsford, Constantine & Gardner, company advertising counsel, saw to that.

With a new Oregon product to sell, Mr. Sandoz started his selling at the top—with Governor of Oregon Paul Patterson, who received — and enjoyed—the first samples.

Initial distribution was in Portland, followed quickly by Spokane and Seattle. Brand-keyed to the numerous other items in the *Bumble Bee* line, fish sticks caught-on quickly with the retailers, and the Ultimate Consumer reacted in a manner that made the *Bumble Bee* buzz appreciatively.

FORMING cartons for Bumble Bee Sticks.

SAWING fish sticks in the C.R.P.A. plant. Note they are cut from bars, not blocks.

A Continuously Constructive Force in the Salmon Industry . . .

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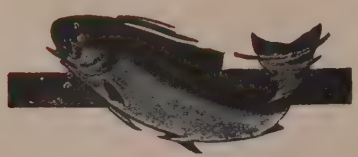
CANNED SALMON



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You get all these advantages when you order Anchorfast® nails of Monel®!

You can be sure they're Monel when you see the anchor stamped on the head.

Here's where you can order any quantity you want—and remember they're economical to buy and install — order them for your next boat or fastening job.

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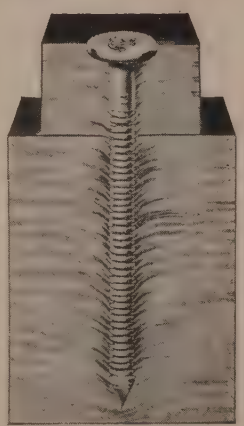

Notice those annular grooves on the Monel Anchorfast nail—they're what give it such tremendous holding power.

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711 Milby Street
Houston 3, Texas

432 Julia Street
New Orleans 12, Louisiana

PACIFIC METALS COMPANY, LTD.
1400 South Alameda Street
Los Angeles 21, California

1533 India Street
San Diego 1, California

3100 Nineteenth Street
San Francisco 10, California

EAGLE METALS COMPANY
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PACIFIC Fisherman's NEWS

SEPTEMBER 1954

Tuna is Delivered Under Protest; Cut Price Accepted as "Part Payment" Only

While vessels of both Southern California tuna fleets, clippers and seiners were unloading their catches at presstime, the owners were not accepting canners demands of payment lower than the 1954 contract of $350 per ton, Yellowfin and Bluefin; $310, Skipjack, to $320-$280 per ton.

Rather than have the refrigerated vessels continue to hold the catches in cold storage during what may well turn out to be a protracted period, officials of the American Tuna Boat Association (clippers) and Fishermen's Cooperative Association (seiners) had agreed to their members unloading at Los Angeles and San Diego plants, and accepting the lower price as partial payment.

To accept as final the packers' lower raw price, the owners declared would destroy the whole structure of cooperative bargaining and make any contract signed in the future worthless. Court action was predicted to settle the price problem.

The sequence of events leading to unloading of raw tuna at "partial" payment, began when, on July 26, telegrams were sent out by two packers, Van Camp Sea Food and Star Kist Foods to all owners and associations that, effective midnight, July 27, fares would be paid for at the 1953 contract price: $320-$280.

The canners asked that this price become effective by "mutual agreement;" naturally, having a firm, signed contract, owners through their cooperative association, refused.

However, negotiations were entered into between the two, looking towards a "tentative qualified agreement." Then, without warning, the owners declare, canners broke off negotiations and took an arbitrary position of, "accept or else."

This the owners, through the association, would not do. However, many did unload and others sailed, but all were firmly insisting they had a signed contract for payment at $350-$310, and were determined to collect through court action if necessary.

CHAS. F. HENNE is new secretary of the Columbia River Fishermen's Protective Union. Long a legislative representative of fishermen, he is the staff representative of the oldest union in the Pacific fisheries.

Early Albacore Indications Good

First Monterey Bay boat to report seeing Albacore break the water in a large school was Clarence Nash on the *Gull I.* This occurred about the middle of July when Clarence was fishing for salmon in a heavy fog and lost his bearings. Instead of trolling along the coast he found he had been travelling due west for five hours. There were tuna all around him but —sad to report—Clarence did not have a thing to catch them with.

George Murphy on the *Ruth E.* picked up 30 fish southwest of Point Sur and Oren Addleman on the *Dolores J.* brought in 90 fish to Morro Bay caught off Point Arguello. *Cape Arago* got 105 Albacore off Davidson seamount and the *Sheila* came in with fish caught off the Farralones. Tuna have been known to reach those waters in July but usually they are found in very small numbers.

Bart and Mabel Swanson of the *Kittiwake* were in Moss Landing for a few days before heading south for Albacore. They had been salmon fishing out of Eureka where they had some good catches.

Two Moss Landing fishermen were among the first in the Albacore fleet to deliver substantial catches in San Diego during July. Nine tons apiece were brought in by Lloyd Hundwin on the *Centennial* and Francis Furber of the *Patricia.* Both men have their wives with them as "boat pullers". That must be the reason for their success.

Clutched Line Saves Life

The Grim Reaper's scythe swept mighty close to **Vince Catanzaro,** San Francisco, hook-and-line boat owner, as he was fishing alone one day off the Golden Gate.

Vince got swept overboard but he grabbed a line on the flopper stopper and hung on. His boat with its automatic pilot doing the work kept right on going, and after about an hour's work Vince was able to pull himself aboard.

California Squid Canning

Early summer saw moderate squid canning activity in the Monterey area, with Monterey Bay yielding fair catches.

Santa Cruz cannery at Moss Landing was particularly active in this trade, taking the catches of four boats: *Tommy Boy, Sal Boy, Lou Denny Wayne* and *Three Sisters.*

The canned squid was destined for the Manila market.

"Yakutat" Touches Reef

Even the head-man can have trouble.

Capt. Sig Hendricks is president of the Fishing Vessel Owners Association, and also master of the halibut schooner *Yakutat.*

Bound north for Area 3 early in June, the *Yakutat* was carried onto a reef in Seymour Narrows. She was gotten off with the assistance of the *Sea Wave* and after making temporary repairs was able to get back to Seattle under her own power.

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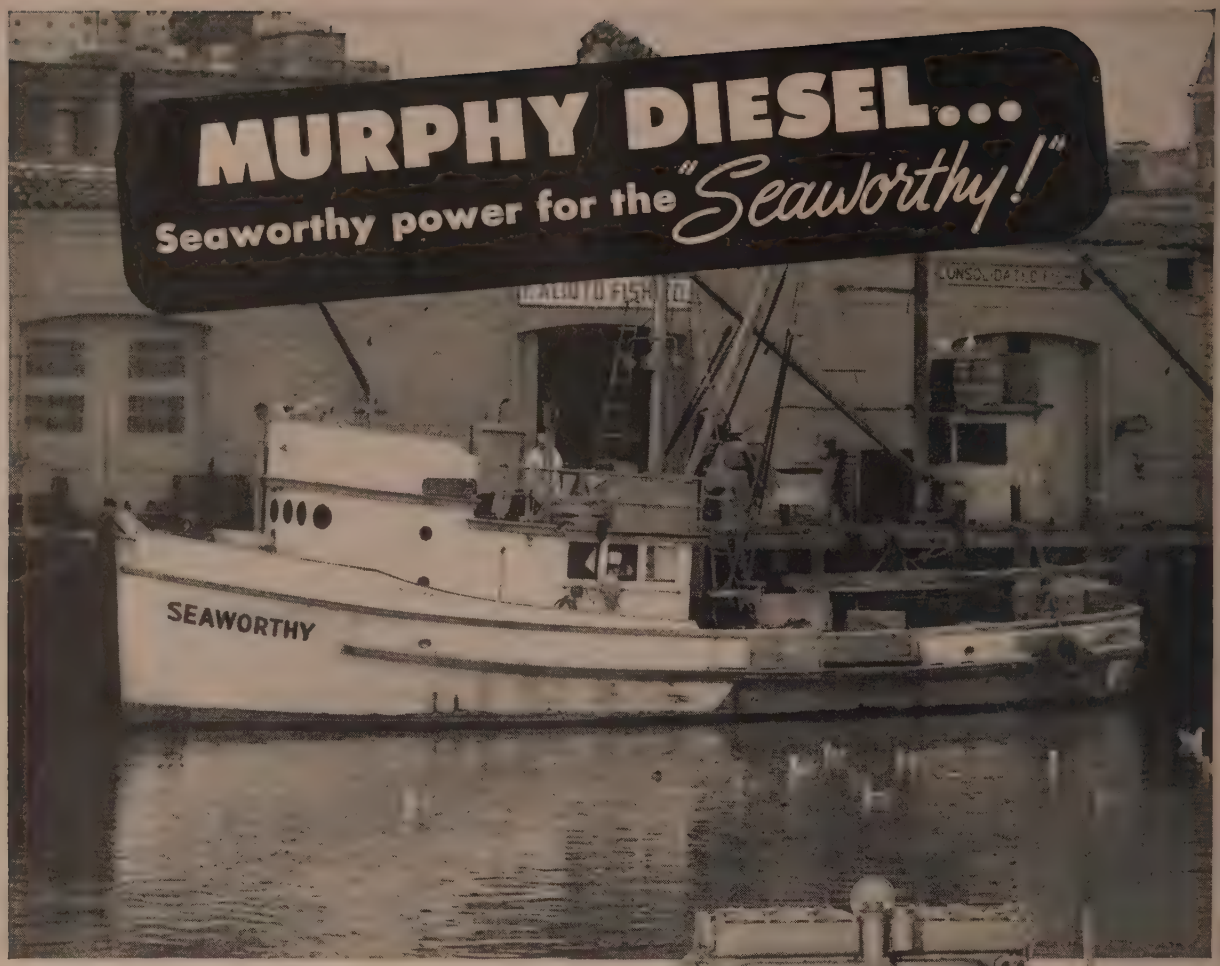

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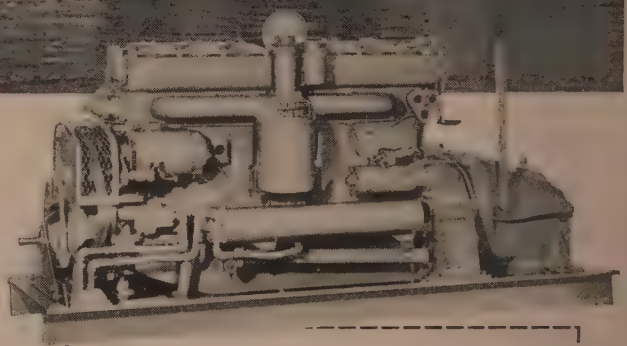

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Dedicated Drive Passes Treaty Law at Deadline

Signature by the President of the International North Pacific Fisheries Treaty implementing act finally gives the American section full standing. It now can move forward to the October meeting in British Columbia with its position assured and with a broadly representative advisory committee behind it.

The act as passed by Congress and signed by the President gives the Secretary of the Interior authority to enforce its provisions on the high seas off the coast of Alaska, limitation of this authority to waters off Alaska overcame the bitter opposition of the tuna and sardine industries to extension of Federal authority beyond territorial waters.

The law as passed omits the politically-inspired provision designed to terminate Interior's authority over the fisheries whenever Alaska may become a state.

Passage of the implementing act after it had been delayed into the closing weeks of the congressional session by bureaucratic bickering was achieved by the cooperation of a small group of dedicated citizens, backed by earnest congressional leaders from the Pacific Coast. The powerful and strategic positions in Congress of men like Senator Knowland of California, Senator Cordon of Oregon and Congressmen Tollefson of Washington, Norblad of Oregon and Allen of California was of the greatest assistance in accomplishing something which seemed almost impossible at so late an hour.

Pacific Fisherman's NEWS

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Tagged Yellowfin Adds 25 Pounds in Year

Observant tuna fishermen have declared their belief tuna, particularly Yellowfin and Big-eye, "eat like pigs," and this is apparently borne out by return to the California Department of Fish and Game, Terminal Island, of a Yellowfin tuna tag.

The fantastic growth of tuna was revealed when Capt. Laurie Massa, San Diego, **Conte Bianco,** brought in a tagged specimen, caught December 23, 372 days after the Yellowfin was tagged by H. B. Clemens, F & G marine biologist on the clipper **Intrepid,** December 16, 1952, which was fishing in the Gulf of Guayaquil, Ecuador.

When the fish was brought aboard off Santa Peru, after more than a year of liberty, it had gained approximately 25 lbs. in weight, from 9 lbs., and in size from 23½" to 36½" and 35 lbs.

This was the first Yellowfin ever to be tagged, stay free for over a year, and still be caught the second time. During that time it had traveled 350 miles. Only three of the tagged Yellowfin, out of 1600, have yet been recaptured, the other two before the tagging operation was really completed. This fish grew one inch a month, and gained more than two lbs. a month in the 372 days' elapsed time.

B. C. Charter Rates Up; Drum Seine Share Holds

Return to the 1951-52 basic charter rates to cover the 1954 salmon season has been approved by the Fishing Vessel Owners Association of British Columbia.

The companies have restored a reduction in charter rates of about 10% which went into effect last year. The charter rate agreement will be reopened next year.

The F.V.O.A. made an official request for a 20% increase for the charter of seine boats and tenders.

Meanwhile a conciliation board's recommendation that the purse seine share basis continue in effect this year for drum seiners was endorsed by a meeting of representatives of the vessel owners and the fishermen's organization.

"Sandra Lee" Bought

Among new arrivals joining the Humboldt Bay fishing fleet is the 41-foot **Sandra Lee,** recently purchased by Alf B. Anderson from the estate of the late Graydon Lee, of San Rafael, Calif. Anderson has registered Eureka as the home port of the craft. The boat was built in Seattle in 1949.

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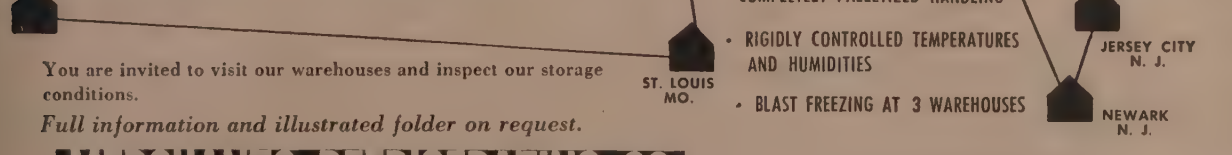

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SCOPE and SOUNDER

Monthly digest of present-day pioneering methods and equipment in world fisheries.

By PETRALE*

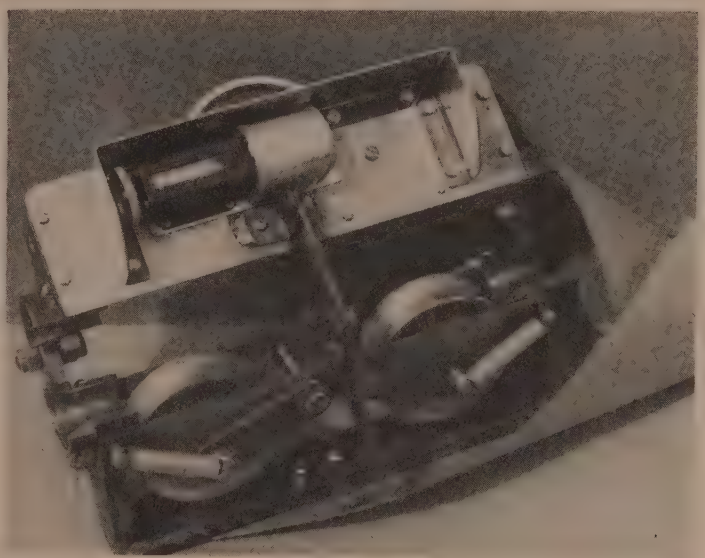
Cable Measuring Device Tested by Trawlers

A new cable measuring device which is being developed by the Olympic Instrument Company has been undergoing tests aboard several Seattle Trawl vessels. The first model designed was placed aboard the trawler *Mitkof*. From suggestions made by Ivar Angell, skipper of the vessel, the device was remade from heavier material and several alterations made in the original design. A second test of the instrument was made by Joe Criscvola, skipper of the *Panther* in July. Joe reported the device measured the cable accurately when up to 170 fathoms were off the drums, but suggested several other changes for quick operation. Designers of the cable measuring device hope to develop a model which will be acceptable for commercial trawlers. At the present, the amount of cable released is measured by markers in the trawl warp. The Olympic instrument Co. present model measures the cable by a friction wheel which rides the trawl wire. The instrument may be clamped to the wire at any desired location. After clamping the device, it is secured by a line at both ends so it is held firmly in one position. Cable readings are given in fathoms on a counter. Further tests of the gear will be made during the next several months.

Will Albacore Again Avoid Northern Waters?

As August rolled along Albacore landings from the northwest were still nil. Since 1951, Albacore along the Washington and Oregon Coasts have been practically absent. A few energetic trollers have searched offshore for this elusive fish, but no catches have been made this year. The erratic behavior of the Albacore has been as puzzling to biologists as it has to fishermen. Information concerning their movements and changes in their distribution from one season to the next is nonexistant. Biological research concerned with the species in Pacific Northwest waters has been limited to several exploratory cruises by the U. S. Fish and Wildlife vessel *John N. Cobb* and a statistical analysis relating catches and size groups of albacore taken off the Pacific Northwest Coast with other areas in the Pacific. These studies have shown a temperature catch relationship for Albacore taken in Northwest waters, that these fish are all immature, and that the fishery exploits three or four size groups. Only during the past three years has any success been obtained in tagging Albacore. The development of a new tag by California biologists resulted in several recoveries from Mid-Pacific catches made by Japanese long-line fishermen.

These recoveries have given the first hope that some clue may be gained as to the extent and distribution of Albacore population. Washington and Oregon salmon trollers finding the king salmon troll fishing tough going had hoped to see the long-finned tuna show up in Pacific Northwest waters. Although fishermen seeking Albacore have reported "tuna water" (58 degrees or over) along much of the coastal area, no albacore have shown.



TRAWL WARP measuring device being tested by Puget Sound draggers, opened to receive cable. Lower wheels are spring-loaded idlers. An upper sheave, pressing down on the cable between the idlers, operates the counting mechanism.

***Petrale will attempt to answer questions from readers; and will welcome correspondence relative to developments which fishermen may consider worthy of inclusion in future editions.**

Comments, questions and contributions should be addressed to: PETRALE, Care Pacific Fisherman's News, 71 Columbia St., Seattle 4.

California Studies Tags

A recent study by Robert D. Collyer, California biologist shows the importance of using a tag which is suitable for the species under study. Using a variety of different fish tags, a series of tests were made on yellowtail to determine the relative merits of the tags. Four types of experiments were conducted to obtain the desired results. Tags were tested by double-tagging yellowtail; by observing tagged yellowtail in an aquarium; by testing tagged fish in a water tunnel; and by testing the physical effects on tags by placing them for prolonged periods on the bottom of a research vessel.

Five types of tags were tested and considerable difference was noted on their ability to remain on the fish. A number of the tags were conclusively shown to be shed rather easily by the yellowtail. Although Collyer's work was on pelagic marine species capable of obtaining relatively high speeds, his work could well be applied to other marine and fresh water fish. Most fisheries investigators have recognized the importance of selecting a reliable tag; however, they have often chosen to ignore it when the problem confronts them. A number of conclusions have been made by biologist concerning the migration, populations, and fishing rates on fish stocks without a proper understanding of the

ower Away. Canal Barge Company dispatch boat goes to ork while towboat and barge wait in the Harvey Canal for raffic to clear at the Harvey Locks near New Orleans, Louisiana. Dispatch boat is an 18-foot Allecweld all-steel hull speedboat uilt by Standard Boat and Motor Company of St. Louis, Mo. Power is a 105 h.p. Chrysler Ace Special Engine.

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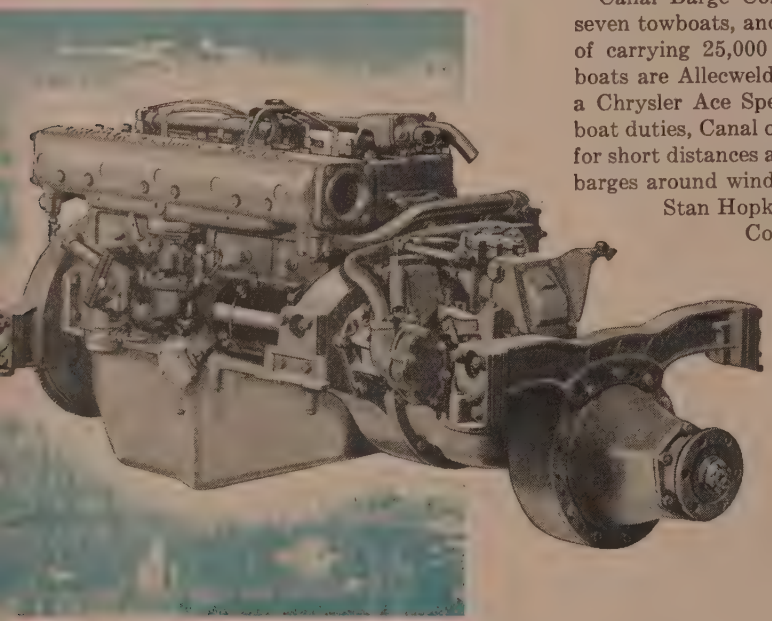

Stan Hopkins, Assistant Port Engineer, Canal Barge Company, passes a lamp to Eric Wallberg, crewman. Lamp will be used as warning light on barge. Note the sturdy construction of Allecweld boat and evidences of rugged service.

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inadequacies of the tags used. Yellowtail is taken by commercial and sportsfishermen in California. The results of the tests by Collyer demonstrated several acceptable tags which will be used in future studies on the yellowtail.

Electronic Fishing

During the past two years, fishermen have taken a keen interest in the new and perfected electronic aids appearing on the markets. Salmon trollers, seiners, trawlers, and tuna clippers are finding use for these instruments in their fishery. Loran is used by a number of the larger boats for navigation, but with the trawler it is an important part of the fishing operation. Drags are measured, steered and timed with loran. The use of the variety of new type echo sounders, "fish-loop," fish-finders and scanners are being placed aboard a number of vessels. Tuna vessels have found them helpful in bait fishing and locating tuna schools. In other fisheries they are still to be proven. They may well play an important roll in the trend towards ocean seining. Trawlers are also placing fish finding devices aboard their boats, but reports on their success have been mixed. The latest Seattle trawl skipper to join the "electronic race" is Erling Jacobsen, skipper of the trawler *Paragon*. Erling has installed radar, and a new fish finding device. These devices along with the loran, radio and direction finder aboard may crowd Erling out of the wheel house. The *Paragon* has been one of the first to produce bottom fish in Seattle. The radar should help him dodge stray fish packers.

Exploratory Fishing

The Fish and Wildlife Service vessel *John N. Cobb* returned to Prince William Sound, Alaska, to renew efforts to find commercial quantities of bottom fish and shellfish in this area. Tests made during early this year failed to locate any areas which offer commercial possibilities. Early results from the *Cobb's* present trawling work have showed more promise. A number of drags made off Middleton Is. in the Gulf of Alaska yielded catches of Pacific Ocean Perch which ranged from 1000 to 6000 lbs. per hour. The drags were made at depths from 81 to 122 fathoms. Pacific Ocean Perch landings have boomed during the past several years.

Fishery Veteran Dies

Pietro Enea Lucido, 82, died last month in Pittsburg, Calif. He was well known in the Pittsburg, Monterey, and Alaska fisheries.

A native of Italy, Mr. Lucido came to Pittsburg in 1895, and in 1901 married the former Angelina Davi of Martinez, who survives him. He also leaves five sons, Horace, Neno, Salvatore, and Frank, all of Pittsburg, and Anthony, of Oakley; three daughters, Mrs. Mamie Ferrante and Mrs. Josephine Flores, Monterey; and Mrs. Rose Pistoia, Pittsburg; 17 grandchildren, five great grandchildren, and several nieces and nephews in the Monterey area.

"Metekla" is Sold

Phil W. Campbell, San Francisco, has sold the halibut schooner *Metekla*, Astoria, to C. C. Willson, and John D. Beswick, John Day, Ore., who will use her for Albacore fishing.

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American Anchovies—

And How They Catch' Em

Bulging brailer signals a good catch of anchovies as Porter Bros.' *St. Peter* dries-up her net off the Southern California coast. Note the "legaz"—the pole projecting diagonally from the rail at the foot of the shrouds—holding the net open while brailing proceeds.

When a fishery jumps more than 1,000% in one year, and more than 1,800% in two years, that's *news*.

California anchovy production was 2,216 tons in 1951, up to 26,888 tons in 1952, and reached 41,532 tons in 1953. Pack for the first four months of 1954 was down to 7,093 tons, against 13,592 tons the year before.

Now ranking as one of the leading fish of the Pacific volume-wise, the anchovy through the years has always had some importance to a limited group of California fishermen. With the failure of the sardine fishery in Monterey and, later, in Southern California, canners required a substitute for an export pack, and anchovies seemed to meet this need.

Port Hueneme and Santa Barbara became centers of anchovy fishing, and much tonnage was trucked to Monterey or to Los Angeles-Long Beach harbors. Two canneries in Oxnard and Port Hueneme worked anchovies on their packing lines.

Anchovies for many years have been fished commercially by lampara boats with production sold largely for bait purposes, fresh or salted, and use of anchovies for live bait for sportfishing boats has always been particularly heavy in Southern California. In Northern California anchovies have customarily been salted.

Anchovies caught by lampara boats in Southern California have been used to a considerable extent as ground "chum" for mackerel scoop boats and as cut bait for commercial hook and line fishing. Some anchovy production is frozen and used as supplemental food for trout in the state fish hatcheries.

First Canned in '46

The first anchovies were canned, it is believed, in Monterey in 1946, when that year saw a drastic failure of the sardine fishery. California Packing Co. is believed to have pioneered such canning. During the next few years, San Pedro area canneries also worked anchovies.

Anchovy Nets Adapted From Sardine Lamparas

During the past three years a number of small boats have turned to fishing anchovies commercially and, in so doing, have developed some refinements in gear and net-making. However, the lampara net in use today for anchovies can be said to have been designed primarily for *sardine* fishing by small boats.

Basically, the boats fishing anchovies with lamparas have developed their nets similar to those used by bait haulers in Southern California ports. Mel Jorgensen, skipper of the *Fortress*, fishing anchovies for California Packing Corporation at Ox-

Deck details of the anchovy fisherman *N. Y.*, showing the twin sheaves of the gurdy adapted from shark gear. The fairlead leaning against the hatch coaming is fixed in the stern when hauling the net. The net carries Spongex floats, almost indestructible, whose great flotation reduces the size of the net pile.

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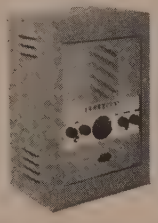

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nard, describes the net used for anchovies now as "an oversized bait net." If a boat working anchovies fortunately finds a school of sardines and mackerel, such a net can be used to set on these fish. Conversely, however, a sardine or mackerel net can not be used successfully on anchovies, for the smaller fish will gill or "Christmas Tree" in the larger mesh.

Lampara Gear is Modified In Fishing for Anchovies

Anchovy fishing today is carried on during daylight hours. Primarily this fishing and gear were pioneered by the Porter Bros. at Port Hueneme, along with the use of a plane for spotting schools. The lampara net developed by Ted Porter was later to be enlarged and tried experimentally on tuna in the Gulf of California.

Hanging Is Vital

The original lampara net at Monterey was said to have been brought to that port from Algiers. This net was characterized by a large and relatively deep bag or bunt of small mesh with two tapering wings graduated in mesh size from 5" at the bag to 14 or 16" at the ends. The take-up in hanging the several pieces of webbing to form the large bag resulted in this net being the most complex piece of fishing gear used in California. Hanging is still a matter of skill, and in the variations of such hanging lie the success of the lampara boat.

Captain Jorgensen declares his net is the result of two years of experimentation. He lengthened the lead line and designed it so that the net hangs deep in the water. The leads, of course, are larger than the older type lampara net, perhaps an increase in weight from 1½ oz. to 4 oz. each. The *Fortress* uses 18-22 leads per fathom.

The new net is considerably heavier than an ordinary bait seine, states Jorgensen. The new lampara anchovy net uses 1/3 more lead-line than webbing, in order to deepen the bag in the water.

Five Men in Crew

With the use of twin gurdies—these to be discussed later in this article — only a five-man crew is required. Purse seiners require a crew almost twice as large.

Wings of the Jorgensen lampara average 65 fathoms long. The bag is 40 fathoms. It consists largely of ramie and cotton webbing.

In lampara fishing for anchovies, all movement is from the stern, and the aim is to get the net into the water as quickly as possible. The buoy wing goes first; then the bag, and the "boat" wing.

No skiff is required in fishing anchovies with a lampara net. Instead, a spring-loaded outrigger is used to control the bag and is hung on the cork line when the net is brought forward on the port side for brailing.

Brailing is by hand and requires a full crew; one man on the winch, one on the brailer handle, one on the zipper on the bottom of brailer, and two crewmen to guide the brailer into the hatch.

The daily catch of anchovies of each vessel is limited by the cannery, since a large load results in crushing and breaking the anchovies at the bottom of the load and making them unfit for canning. Anchovies just can't be handled in the same manner as sardines. Even though a boat such as the *Fortress* might make a set on a school as high as 70 to 80 tons, such tonnage would not go entirely to the boat making the set. Other boats would brail from the net.

Mel Jorgensen, owner-skipper of *Fortress,* a former Seattle halibut boat, holds a section of anchovy lampara, showing the small mesh and the corkline fitting by which it is attached to the "Pegaz" for control of the net while brailing. The corkline behind him is that of a seine piled on a boat moored alongside.

As stated before, a new method of anchovy fishing came about when the Porter Bros. employed a plane for spotting schools and directing the boats to the grounds. It is generally agreed that the *St. Peter*, skippered by Ted Porter, was the first lampara boat to concentrate on anhcovies out of Port Hueneme, using a plane. Then the *N. Y.*, another Porter-owned boat, joined the *St. Peter,* along with the *Gaviota.* In 1953 the *Vittoria,* the *Harmony,* the *American Beauty* and the *Dorothy M* joined the fleet.

Four Lamparas For Price of Purse Seine

To return to a discussion of the net itself. Cost is a real factor in the employment of a lampara net for anchovy fishing. Four lamparas can be built for the price of one purse seine. It is also interesting to note that the old lampara net weighed-in, total, at 395 lbs. The new, larger lampara, designed for tonnage, and to hang deeper in the water, weighs 2500 lbs.

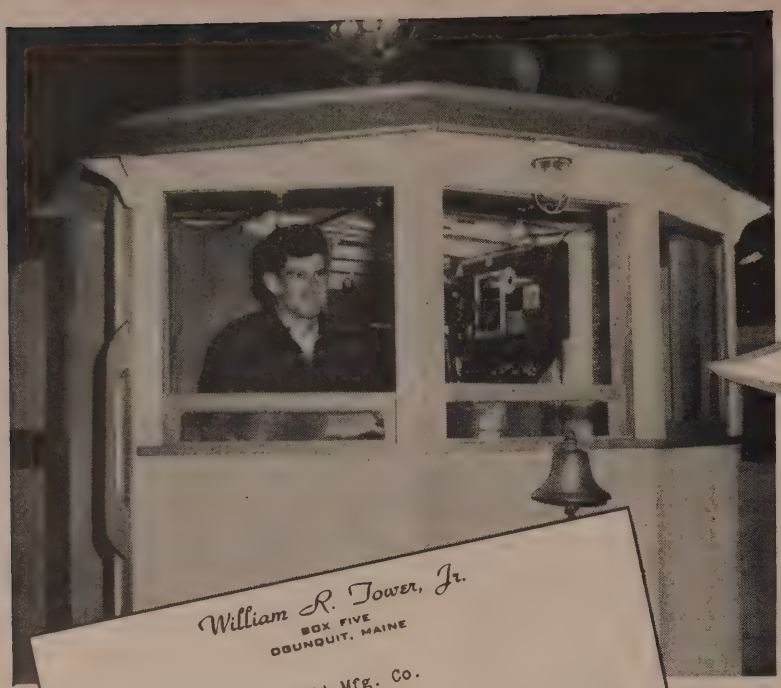
Lampara in Detail

The figures given here describe an average lampara and were supplied by staff members of Marine Hardware Co. at San Pedro. Each wing is 50 fathoms deep, 100 fathoms long. The bag is approximately 40 to 60 fathoms deep. Total length of net, overall outer circumference, measuring the cork line, is 250 fathoms. The old style lampara net was 15 fathoms deep in the wing and was 146 fathoms overall in size. The bag was approximately 35 pounds as compared to 500 pounds today.

The new bag is constructed with a ¾" 6-thread, 12-fathom square brailing strip. The rest of the bag, approximately 400 pounds, is 600 meshes deep, ¾", 9-thread cotton. The throat, or apron, is 680 fathoms deep, of 4" mesh, 6-thread cotton.

The first strip in the wings, 11 fathoms long, 50 fathoms deep, is 4" mesh, 6-thread. The next section of the wings, on the average: 2 to 3 strips of 6" mesh, 6-thread, 17 2/3 fathoms long, 50 fathoms deep. The remaining two or three strips are 21 fathoms long, 50 fathoms deep. The tip is usually 4" mesh, 18-thread.

The new lampara net is so long that



More of my friends are changing to nets of NYLOCK instead of using cotton

William R. Tower, Jr.
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The Heminway & Bartlett Mfg. Co.
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We used this bunt the entire season without losing a fish because of the Nylock coming apart when bailing from it. We did rip the Nylock from catching on sharp things on the bottom. Any twine will rip when caught this way. I will say, however, we didn't get any very long rips as we did in the main body of the seine (cotton - 20/9).

Once the fish were in the bunt end and we were clear of the bottom, we could count on the trip for we never lost a fish from this point on.

A full trip for us with a seine and boat of our size would be fifty to sixty thousand pounds. We could handle this amount without bothering the twine in any way. We have caught 100 thousand pound schools and had to get help from the other fishermen to help us "dry up" (get the fish ready to bail).

It was a common experience to hear other boats come on the air and say "They had a good trip but the bunt bursted". We never did.

I will continue using my bunt this summer after having fished it for two years.

Sincerely,

Bill Tower

Yes, Bill Tower *and no wonder,* for fishermen all over the country have discovered that nets made from specially processed, U.S. Patented (No. 2590586) NYLOCK NYLON TWINE . . .

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THE FISH NET & TWINE CO., 310 Bergen Ave., Jersey City, N. J.
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Anchovy lampara developers—Lloyd Lindwall, skipper of *Linda,* is on the left, and then his brother, Paul, who developed the Lindwall twin gurdies used on this type of net. Edward M. Porter, wearing hat, is the senior member of the Porter enterprises. On the right is Keith Porter who, with his brother Edward A., skipper of the *St. Peter,* developed the Porter anchovy lampara.

it must have a selvage along the cork line to keep the net from tearing. On the bag this selvage is ½", 27-thread. The wing selvage is 4", 18-thread on the cork line, approximately one fathom deep.

The older lampara net can be described as having an ice cream cone-shaped bag; the new one is almost square. Cotton or ramie is used almost entirely, very little nylon.

Heavy leads are used along the apron for faster sinking; and, as stated before, the lead line is shorter than the cork line to create a tension and permit a closing of the mesh.

For floats, the Porter Bros. boats are using Spongex products, 3x6 in the wings, 4x8 for the remainder of the net. Canvas and glass floats are used, of course, on the section of the wing which needs extra buoyancy for handling.

Lloyd Lindwall, who pioneered anchovy fishing with his *Linda* at Santa Barbara, reports he uses No. 1 Spongex in the wings, No. 2 in the apron, and No. 3 in the bag.

Vertical Twin Gurdies Haul Modern Lamparas

The Lindwall name has become associated with the engineering and construction of the twin gurdies which are now more or less standard equipment on lampara boats. The horizontal single gurdy, operating on a take-off from the main engine, was brought into California waters, it is reported, by shark-fishing boats from the Northwest. Apparently the first lampara boats to experiment with these to haul wings were at Santa Cruz. An automobile transmission is an essential part of the gurdy.

Lindwall Boat Works is now covering the gurdy table with glass fiber cloth and resin. The new lampara gurdy arrangement now has no swinging fair lead and the new placement of the net roller is on the stern, rather than mounted on the gurdy itself. Each gurdy rotates in the opposite direction from the other.

Lloyd Lindwall reports that the small lampara boat got into action around Santa Barbara and Port Hueneme in 1950, the last good year for sardines. That year the *Linda* hauled sardines for bait out of Santa Monica; and that year saw most of the bait haulers, lampara boats, converting to twin gurdies. Lindwall has worked with the Porter Bros. during the past several years. At the height of last June's fishing, some 15 lampara boats were working anchovies out of Santa Barbara and Port Hueneme, including two Castagnola Bros. boats, two belonging to Geo. V. Castagnola, those working for Porter Bros., and the independents.

The anchovy boats at Santa Barbara are now using two planes for spotting, one operated by a Ventura pilot, Wayne Rogers; the other by Edward Dearden of Carpinteria. The planes work on shares with the fishing boats. Communication is by two-way radio with the fleet when a school is spotted.

How Anchovy Future Looks From Here

What is the outlook for anchovy fishing this year? The season customarily begins in May when the fish are at their best. Apparently the canneries have a fairly high inventory of canned anchovies; and the high production of sardines in such countries as South Africa and Japan is giving the American export market for canned anchovies unwelcome competition.

For the United States domestic trade California canned anchovies labor under an apparently insuperable handicap imposed by the Food and Drug Administration's definition of sardines, which limits sardines to small "clupeoid"—herring family—fish. Not belonging to the herring family, anchovies are excluded from being "sardines," even though they are more like "sardines" than some fish which qualify for that magic title.

American fish distributors agree that the consumers in this country are so imbued with the idea that anchovies are tiny fish cured in the Scandinavian manner, or fillets thereof canned in oil as in Spain, Portugal and Italy, that they simply won't accept a product labeled "Anchovies" and packed "sardine style." Uncle S., by the way, won't even tolerate "sardine style" designation on canned anchovies.

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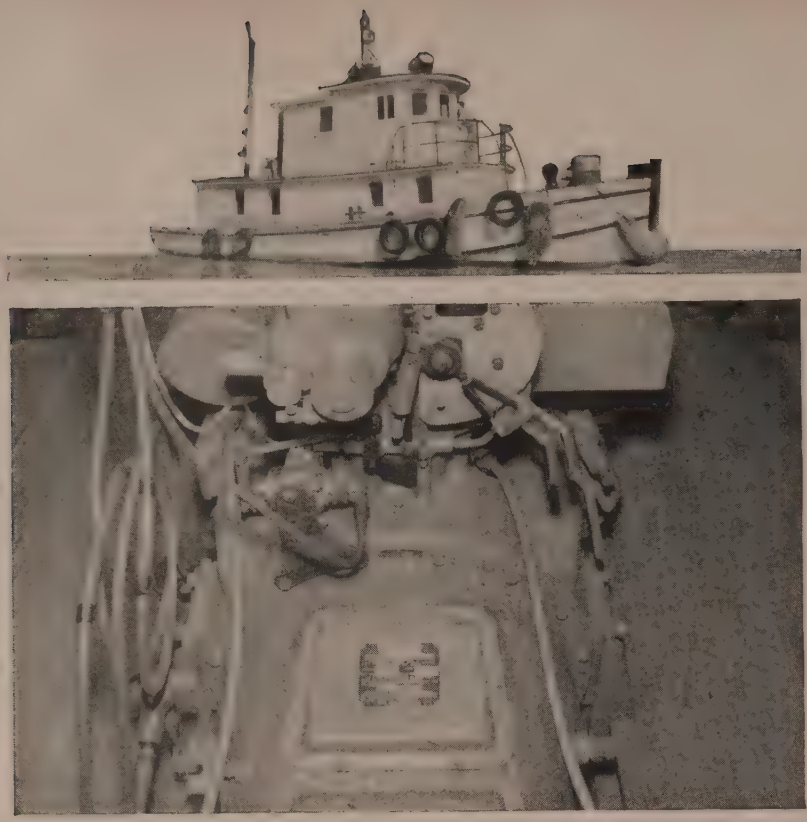

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Hydraulic Division, Rockford, Illinois

Bodega Bay Shrimp Operations Resumed

The shrimp season has started at Bodega Bay, Calif., and Vic Stevenson, skipper of the trawler *Jefferson* is fishing for Meredith Fisheries.

Max Carlson, Newport, Ore., with his dragger *Faymar* is now fishing out of Bodega Bay.

Zanich Bros., from San Pedro, have purchased Louis Asman's wharf at Bodega Bay, Calif., and are buying fish on it.

Sam Sabella, San Francisco, has repowered his troller *Betty Jo,* with a Chrysler Crown, 2-1 reduction gear. The engine was bought from and installed by Boicelli & Boss, Fishermen's Wharf, who also put on an Aquafeeder.

Sam Calandrino, San Francisco, has equipped his troller *Paul C.,* with a Bendix outside loop direction finder, and his brother Matt Calandrino, has fitted his party fishing boat *Maria Elena* with a 50 watt Apelco radio telephone and a Bendix DF. The instruments were purchased from and installed by Cal-Marine Radiophone Co., Fishermen's Wharf, San Francisco.

Andy Credellos, who formerly operated Andy's Lookout, coffee shop on the finger slip at Fishermen's Wharf, San Francisco has purchased the troller *Wayfarer* from Cass Gidley, and has equipped it with a Bendix outside loop DF Model 530 DXL.

Fred Bobsien, Sausalito, has repowered his party fishing boat *Merrimac* with a GM 4-51 diesel engine purchased from Shoreline Diesel Maintenance Co., Fishermen's Wharf.

Tom DiAngelo, San Francisco, had the cabin on his troller *Lou Ann* rebuilt by Genoa Boat Works, San Francisco, and also had Shoreline Diesel Maintenance rebuild the GM 2-71 diesel engine.

Victor Montalbano, San Francisco, has repowered his 32 foot troller *Baby* with a GM 2-71 diesel engine, purchased from and installed by Shoreline Diesel Maintenance, Fishermen's Wharf, San Francisco. The engine is fitted with 3-1 reverse and reduction gear and swings a new 28x26 Michigan wheel purchased from Thomson Machine Works, San Francisco.

* * *

Gustavo Ycaza, for three years consul for Ecuador at San Diego, has been transferred to Bremen, Germany. He will be succeeded by **Guillermo Echanique,** formerly stationed at Miami.

Abandon "Alice" Search

The search for the *Alice*, with two San Pedrans aboard, missing for more than a month, has been abandoned, according to the Coast Guard of San Pedro. The two crewmen were owner-skipper Tony Tom Jokus and Sven Jonsson. There was no radio aboard the boat.

New Clippers' Auxiliaries

Two Pacific auxiliaries per tuna clipper will be used aboard the two new Soares' tuna clippers now under construction at San Diego. These Model 1905 auxiliaries will work 150-kw. generators. The Pacific units are sold by the J. T. Siler Co., Wilmington, Calif.

"Roaming With Rita" Is Troller's Book

Harold Ingebrigtsen, 58-year old Westport fisherman known as the "Westhaven Sea Wag" through his newspaper columns, has published his first book, "Roaming With Rita," a colorfully-written story of commercial fishing in the Grays Harbor area.

Rita of the title of the book is Ingebrigtsen's 40-foot troller.

Campbell Machine, Cradle Of Clippers, Sold

Campbell Machine Company, San Diego, "birthplace of tuna clippers," owned by Dave and George Campbell, was sold in August to a syndicate of 15, mainly composed of tuna clipper owners. The name is being changed to Campbell Machine, Inc., and new president is Anthony D. "Hank" Madruga. Former owners were to remain for a short time at the yard in an advisory capacity. Details of the new management were not complete at press time.

Retiring are two men most responsible for creation of the Pacific Coast's unique and costly-clipper fleet. The Campbell brothers built 77 hook-and-liners from 1924 to 1952. Beginning with a machine shop in San Diego, they established the shipyard in 1924, building then, as the model of all clippers to come, the 64' *Oceana* for M. O. Medina. Two years later they built the 112' *Atlantic* for the same owner.

Sounder on Scout Skiff

Chicken of the Sea, formerly the *White Star*, Van Camp Seafood Company's research boat, has installed a portable Bendix depth recorder on the boat's skiff. And, several months ago, the boat itself received a Sea Scanar for experimental purposes. This is a sonar-type device used for locating schools of fish.

Moss Landing — Monterey Bay

Levi Wolf of Modesto has joined the regular contingent of day boats running out of Moss Landing. Levi built his 18' boat himself and had it hauled over for the launching. Art Erwin of the *Edith M.* helped Levi with gear and rigging for his initial commercial fishing trip.

"Tex" Holdridge of the *Dorothy V.* is back on his boat again after a four month session in the Marine hospital this spring. His son, Dan, from Portland, Oregon on vacation helped his father get the boat in readiness for tuna.

Albacore II was sold in Moss Landing by John Williams to Clifford Dusek of Monterey. John had owned the boat three different times. He built her originally for use as a party boat out of Newport, Ore. Not long after that an explosion ripped the boat from stem to stern and John had to rebuild the vessel. During the war the *Albacore II* was taken over by the Navy and John bought her back at war's end.

After fishing for several years he sold the boat to Lee and Thelma Bothwell. John again became owner of the boat when the Bothwells purchased the *Lanola* last year.

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(signed) John Overbo, Owner and Skipper, "Pacific," Seattle, Washington.

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—Photos by Caterpillar Tractor Co.

Court Lowers Boom On Sitka Seiners

The boom of penalty was dropped crushingly on six Sitka purse seiners by U.S. Commissioner Frank Richards of Sitka this summer when they pleaded guilty to fishing in a closed area.

He lashed them as well with the declaration that the salmon runs of the Territory could not be restored until fishermen cooperate with conservation regulations.

The boat involved was the *Freddie II*, Nick Kasakan master. He was fined $800 and sentenced to 60 days in jail. Frank Casher also drew 60 days, plus $500.

Other crew members: Richard Eliasson, Henry Krukoff, Stanley Westover and Carl Kerr were sentenced to 30 days, plus $250 each.

Quick Work Kills Fire

Admiral King, San Francisco trawler, Benny Pignatti, skipper, was threatened with destruction when an electrical fire broke out on her as she was lying at the General Petroleum marine service station at Eureka. Quick work by the crew and the prompt arrival of the Eureka fire department kept damage at a minimum and she is now back fishing.

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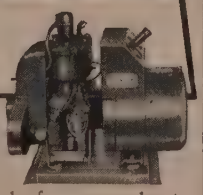

For a safe, sure, every-ready source of electric power, choose a Universal; backed by over a half century of 100% marine engineering experience. They are smaller, simpler to install—with water-cooled models for every boat. Sizes from 250 watts to 25 KW. New—32-volt, 1000 watt Battery Chargers, for maintaining engine and lighting batteries. Ask about it!

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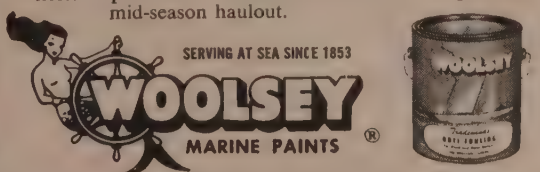
Conventional bottom paints can't give you the longer-lasting fouling resistance of "TRADEWINDS" Anti-Fouling. Bottoms protected with this highly-toxic Woolsey formula *remain clean*...and this remarkably efficient repellent also insures excellent slip and smoothness. Repaint with "TRADEWINDS" and forget that mid-season haulout.



C. A. Woolsey Paint & Color Co. Inc., 229 East 42nd St., N.Y. 17, N.Y.
Chiles Boat Co., 11333 Atlantic Blvd. ..... Lynwood, Calif.
Oregon Marine Supply Company, 235 S.W. First Ave. Portland 4, Oregon
Pacific Marine Supply Company, 1217-1223 Western Ave. Seattle, Wash.
San Diego Marine Hardware, 1520 India Street San Diego, California
Weeks-Howe-Emerson Company, 255 Mission Street San Francisco 5, Calif.

Bristol Bay Hull, Puget Sound Equipment

***Glasey* is an interesting Puget Sound Gillnetter owned by Chris Johnson of Seattle, being fished her first season by Ben Peterson. She was built by Maritime Shipyards, Seattle, using one of their stock Bristol Bay gillnetter hulls, but with house, reel, roller and dinghy rack according to ideas worked out by Mr. Johnson and the yard's architects. Power is a Chrysler Crown working an Olympic wheel through hydraulic gear and 2:1 reduction. The Monel shaft turns in Goodrich cutless rubber bearings. Reel is Petrich Machine Works' product.**

Wrecked Troller Saved

Faneg, San Francisco troller, recently went ashore in a heavy fog on her way to Pt. Arena. She was skippered by Dominic Battaglia. She was pulled off the beach with minor damage by Freckles Vella in the *Chief*.

Plastic-Fibre Repair

A new product, "Narmweld", a plastic-fibreglas kit, is being used in the San Diego fishing fleet to repair pipe leaks. Tom Carniglia, recently used this product on his fishing boat, *Pacific Queen*.

Explosion Sinks "Montara"

Montara, on her way from San Diego to the Albacore schools in late July, sank after an explosion. One crewman was seriously injured. The *Red Wing,* another Albacore boat, rescued the seven-man crew.

The casualties of the Albacore season continued in July with the loss of the *Fairhaven* and two of her crew, both of whom drowned in the vicinity of Guadalupe Island. The men were Blanchard M. Sorenson and Richard G. Shannon. The skipper, Bert J. Squires, was hospitalized, after rescue by *Southwind*.

Eureka Crab Take Down

For the second year in succession, crab operations out of Eureka show a decline based on reports for all but the tail end of the 1954 season. Deliveries at Eureka up to the early part of July totalled 1,262,300 lbs. with the certainty that this figure would not be materially altered.

The 1954 catch was off from the 1953 total of 1,760,280 pounds, which also fell below the marks set in the two preceding years: 3,230,000 pounds in 1951 and 3,236,000 pounds in 1952.

Harry Kane has been appointed assistant manager of the Los Angeles branch of A. Paladini, Inc., wholesale sea food producers and distributors.

NORTHERN CARGO HOIST

Sturdy

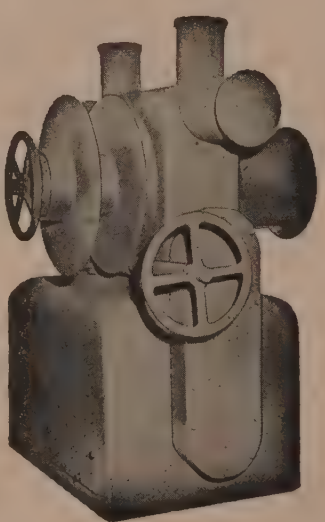
Light Weight

Compact

LOW IN PRICE

A.C. or D.C.

10 hp.



The answer to Fishing and Commercial Boat Operators who need a low-priced, heavy-duty 100% Foolproof Cargo Hoist.
220-440 Volt A.C. or 115 230 Volt D.C. 10 hp. Motor —Bronze and Roller Bearings—100% Galvanized Welded and Cast Steel Construction—Chain, Worm gear and Bearings bath oiled—Bronze Bushings pressure greased—Portable Operating Station on 20 ft. cord standard equipment.

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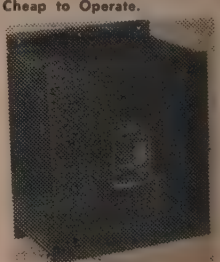

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Puerto Rico Tuna Supplier Is Wrecked

The tuna clipper *Gulf Star*, built in 1950 in New Orleans, went aground 30 miles south of Talara, Peru. As this issue of PFN goes to press, efforts are being made to float the steel boat from the sandbar on which she struck.

The 122' boat was fishing for National Packing Co. of Puerto Rico, affiliate of the South Pacific Canning Co. of Long Beach. Her skipper is Robert Garber.

The crew is reported to have been taken off the boat by the International Petroleum Co. of Talara and are staying in a hotel in that port.

Other boats fishing for the Puerto Rican cannery include *Western Pacific* and *Santo Antonino*, recently converted from a seiner to a bait boat.

"Northern Isle" Sold

The sale of the *Northern Isle*, 56' combination fishing boat, was completed recently to Bert Holloway of Santa Cruz by the Monterey Canning Co.

Ed Weidenaar, who ran the *Gary Lee* last year, will take the boat south for Albacore and Joe Wong will accompany him. The vessel was last operated by Knute Peterson for shark fishing.

Bits from the Bay

Molly Lou, 60' trawler owned by Alfred Puccini, San Francisco, has been sold to Monroe Abalone Co., Newport Beach, Calif. The craft is powered with a GM 6-71 diesel engine.

* * *

Louis Svilovich, A. Puccini & Sons, Fishermen's Wharf, San Francisco, is back on the job again after being hospitalized for a month.

* * *

Philip Pizzo has installed a Chrysler Crown engine in his salmon and crab boat. The engine was purchased from and installed by Boicelli & Boss, Fishermen's Wharf, San Francisco.

* * *

Victor Montalbano, San Francisco, recently repowered his hook and line boat with a General Motors 2-71 diesel engine, purchased from and installed by Shoreline Diesel Maintenance, Fishermen's Wharf, San Francisco.

* * *

The California Department of Fish & Game boat *Nautilus* is being equipped with a Nordberg diesel generator set, purchased from King-Knight Co., Fishermen's Wharf, San Francisco. The Nordberg diesel, Model 4FSI, drives a 10 kw, 110-volt a-c generator and a 2 kw, 32-volt d-c generator.

* * *

George Aitken, Eureka, is repowering his 32' hook and line boat with a Nordberg Marlin engine, equipped with a 3.32-1 reverse and reduction gear, and front clutch power take-off. The engine was purchased from King-Knight Co., Fishermen's Wharf, San Francisco.

* * *

The boat **Roz** was recently sold by her owners, Frank Bruno and Charles Storelli of Monterey, to Julio Fernandez, also of that city. Frank, who also owned the Monterey Frozen Fish Market, has sold out that operation and gone into partnership with Nino Russo running a new fish market in Salinas.

* * *

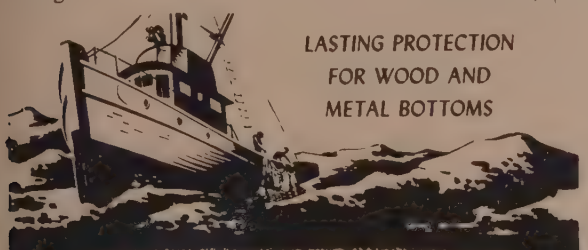
Ben Aiello, Monterey, has repowered his 28' hook and line boat with a Universal Super Four 50-hp. gas engine purchased from Thomas E. Short Co., San Francisco. The engine is equipped with 2¼-1 reduction gear.

* * *

James F. Tolagson, for many years associated with Oxnard Canners, Inc., Monterey, and for the past several years manager of the company, is now in the real estate and insurance business pending a return of the vanished sardines.

* * *

Frank Grillo, Monterey, former owner of the hook-and-liner **Two Brothers,** has purchased the purse seiner **American Rose,** formerly owned by Joe Rappa, and will convert her for dragging operations. He will fish for the Regal Fish Co., Monterey.



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Inter-Trop No. 50's toxic qualities have been tested in arctic and equatorial waters alike with this result: *High resistance to every type of fouling growth and worms.* Easy to apply because formulated with a full body; and Inter-Trop is economical because it is laboratory-engineered for long life.

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A specialized primer for metal bottoms! Practically impervious to salt-water. Primocon seals off plates, seams and rivets of dissimilar metals which tend to corrode by electrolysis. Use under Inter-Trop No. 50 for maximum protection against fouling.

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1. Easy to apply, no heating; dipping time—5 to 10 minutes. Quick to dry—6 to 12 hours.
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6. Manufactured under controlled, scientific conditions by the pioneer of this modern type of preservative.

ALL OF WHICH ADD UP TO GREATER ECONOMY THRU' SAVINGS IN NETTING, TIME, AND MANPOWER.

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LINES and LEADERS

C. C. Berkley to Manage Merchants Refrigeration in Calif

John B. Beard, vice president and general manager of Merchants Refrigerating Company of California, has announced his resignation effective August 1, 1954 in order to devote full time to his personal business.

Mr. Beard headed the California Company prior to its purchase in 1953 by Merchants Refrigerating Company and will continue as a director of the parent organization.

Clive C. Berkley, manager of operations of the Modesto plants since 1945, has been appointed general manager of Merchants Refrigerating Company of California.

Merchants Refrigerating Company has refrigerated warehouses in New York City, Jersey City, Newark, Buffalo, St. Louis, and Hopkins, Minnesota as well as Modesto.

Plymouth Develops Rope For Drum Seine Needs

A. L. Bergman, San Francisco, Pacific Coast manager, the Plymouth Cordage Co., left last month for the annual district sales meeting at Plymouth, Mass.

Earlier in the month he had met F. C. Hilton, field engineer of the Plymouth Cordage Co. in Seattle. Mr. Hilton was on the Coast checking into the effect that the new drum seiners would have on rope requirements.

Mr. Bergman said that Plymouth has developed a rope that will withstand the strains of tension caused by the big drums. While in the Puget Sound area Mr. Hilton went out on several drum seiners, accompanied by Joe Valich, Pacific Marine Supply Co.

Mr. Hilton also went down to Coos Bay where he consulted with various crab fishermen regarding pot warp and treatment of rope.

Bendix's Ken Marlin Visits Northwest Dealers

Ken Marlin, who has charge of marine sales and service on the Pacific Coast for the Pacific Division of the Bendix Aviation Corporation, North Hollywood, Calif., spent the early part of August in the Pacific Northwest calling on the distributors and dealers in this area who handle Bendix depth recorders, Bendix automatic pilots and Bendix marine radios.

RAYTHEON advances this man, William W. Wexler, to advertising and sales promotion manager of equipment sales.

Appointment of William W. Wexler as advertising and sales promotion manager in the equipment sales division of Raytheon Manufacturing Company was announced today by John F. Morten, marketing services manager.

Mr. Wexler will be responsible for advertising and sales promotion for the industrial and component products groups, reporting to the marketing services manager.

Before joining the Waltham, Mass., electronics firm, he was with Murray Manufacturing Corporation, Brooklyn, N. Y., where for the first three years he was responsible for their advertising and sales promotion, and for the past year, for their marketing research programs.

Chevron Pressure Priming Starts Cold Engines Now

Operators of heavy duty gasoline and diesel engines will be interested in Standard Oil Company of California's new Chevron Pressure Primer System, designed to quick start all types of internal combusion engines at low temperatures.

The Chevron Pressure Primer System uses Chevron Priming Fuel packaged under 250 pounds of pressure in a 9.9 cc. steel bulb with welded closure. The priming fuel is a highly combustible material that permits the engine to run until it can build up enough heat to operate on the regular fuel.

The operator controls the release of the bulk by means of a small discharger. When priming fuel is needed, a bulb is placed in the discharger, a lever is pushed which pierces the sealed cap of the bulb, and directs the priming fuel through a small tube connected to the engine air intake system. The priming fuel enters the engine in a finely atomized spray which insures instant ignition.

In addition to simplicity, maximum safety is a feature that will particularly interest operators of marine engines, and all installations where explosion and fire hazards are critical.

The Chevron Pressure Primer bulbs are built to withstand between 6,000 and 8,000 pounds hydrostatic pressure in temperatures of over 600° F. without rupture. This provides maximum resistance to accidental release of the fuel by abnormal heat, water or physical shock. In addition, the bulbs are cadmium plated to prevent corrosion while in long-time storage. The discharger, too, is waterproof and dustproof, and designed to eliminate undesirable escape of inflammable material.

Some of the largest manufacturers of heavy duty engines are already installing the Chevron Pressure Primer System at the factory. New users of the Chevron Pressure Primer System have been enthusiastic about its economy of operation, its simplicity, its many safety features, its ease of installation, and the fact that it can be readily adapted to all types of internal combustion engines.

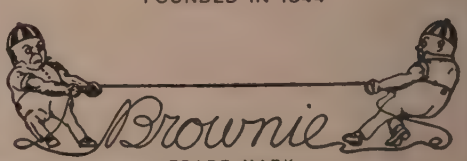
MANY FISHERMEN ASK —

What is combination nylon?

BROWNIE SAYS —

Combination nylon as the name implies is part filament and part spun nylon. It combines the superior strength of filament nylon with the improved qualities of spun nylon. It is at its best when used as a selvege twine.

FOUNDED IN 1844



TRADE MARK

Particular fishermen all buy Brownie Brand Combination Nylon twine for use in getting their nets ready for a successful season.

* Next month Brownie talks about Dacron.

Call the CONSOLIDATED NET & TWINE CO., INC.

FISHERMAN'S TERMINAL PHONE: ALder 6387 SEATTLE 99, WASH.

PACIFIC COAST DISTRIBUTOR FOR BROWNELL NYLON PRODUCTS

BROWNELL & CO., INC.

MOODUS, CONN.

GM DIESEL
CASE HISTORY No. 32-895

BOAT AND OWNER: 57-foot "Alaska limit" purse seiner "LAURIANNE" owned by Farwest Wrangell Company, Seattle, Washington.

INSTALLATION: General Motors "6-110" Marine Diesel replaced another Diesel engine. Swings 48" x 39" screw through 3.7 to 1 reduction.

PERFORMANCE: Company President A. R. Brueger (in the salmon industry 43 years) says, "Our experience with many GM Diesels caused us to specify the GM 6-110 for the 'LAURIANNE.' It's the ideal engine--we get maximum power in the engine space available." Switch to GM Diesel power gave 1.5-knot speed increase. Boat used for salmon fishing and as cannery tender.

It pays to STANDARDIZE on

GM GENERAL MOTORS DIESEL POWER

The choice of experience—
GM DIESEL POWER

Experienced fishermen from Maine all the way around to Alaska report that General Motors Marine Diesels cost less to run and less to maintain —give them more "net" profit no matter what the size of their catch. That's why you'll find fishing fleets standardizing on these smoother-running 2-cycle Diesel engines.

Like all GM Diesels, the "6-110" delivers more power from a smaller, lighter engine. It takes up less space in the hold, saves room for fish and fuel. Fast-accelerating 2-cycle operation means smoother, steadier, more responsive power. Clean, simple design speeds servicing, cuts maintenance costs. And when they're needed, parts cost less, too.

The "6-110" is also available in the new 409 continuous shaft horsepower "110 Tandem Twin"—two "6-110's" arranged in tandem and driving a single shaft. It's priced lower than other Diesels of comparable power—does more work at less cost. For complete details, ask your GM Marine Diesel distributor or write:

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS • DETROIT 28, MICHIGAN
Single Engines . . . 16 to 275 H.P. Multiple Units . . . Up to 840 H.P.

Sales, Factory-Engineered Parts and Authorized Service through distributors and dealers in all important marine locations. SEE your local Telephone Classified Directory or write, wire or phone for name of nearest Distributor.

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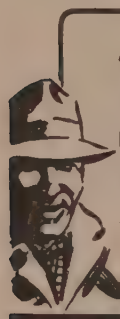
10c a word per time, $3.50 minimum. (For box numbers addressed to PFN, add $1.00.) Business card display—$16.50 per column in. per insertion, with lower rates on contract basis. Mail all copy to PACIFIC FISHERMAN'S NEWS, 71 Columbia St., Seattle 4, Washington.

FOR SALE: Boat Kettenberg 38'x11½, Engine 3 cyl. GM. $12,000. A. Stagnaro, 1420 Palos Verdes St., San Pedro, Calif. Phone TE 2-6926.

ANCHORS: 21 lb. Northill $21.50; 17 lb. Danforths $18; 160 lb. Danforths $80. CO-OPERATIVE PIPE & STEEL CO., 1800 So. Alameda, Compton 1, Calif. or 1715 E. Anaheim, Wilmington, Calif.

FOR SALE: Chrysler Royal engines, 8 cylinder, 141 HP—new. Priced for quick sale. SHERMAN SUPPLY CO., 2456 - 1st Ave. So., Seattle. SEneca 0061 or MAin 4802.

FISHING BOATS FOR SALE: Troller "Nesral", 46', 1943, 6-71 GM diesel, Radio and DF, Iron-Mike, 6-spool Salmon Gurdies, $12,500; Troller "Delle Marie", 50' Shain hull, 6-71 GM diesel, usual equipment, $12,500; Others, including several MONTEREY PURSE SEINERS. DON WOODWARD, Boat and Real Estate Broker, at Marine Supply Store, PO Box 45-A, MOSS LANDING, Calif. Telephone CASTROVILLE 6652.



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FOR SALE

1. Buda Diesel, Model 6D TMR - 317 with 2.04 to 1 reduction. Good running condition—$700.
2. Hicks Gasoline, DY 2026. Good condition—$100.
3. Sheppard Diesel, Model 12F. Good condition—$375
4. 2 Caterpillar DI7000, 2 to 1 reduction gear. Very good condition—$3500 each.
5. G.M. Diesel 20 KW generator set. Heat exchanger cooled. Excellent condition—$2500.

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A name fishermen have trusted
for more than 30 years
AL LARSON BOAT SHOP
General Machine Repair Work
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Spongex Floats Sold By Hutchinson in Mexico

Wm. Hutchison & Associates of San Pedro have been appointed Mexican distributor for Spongex fish floats, manufactured by Sponge Rubber Products Co. First order is reported to be for 5,000 floats to be used on the shrimp trawlers, etc. out of such ports as Guaymas. The Wm. Hutchison enterprise maintains a marine supply store at Mazatalan and has warehouses in various other cities in Mexico.

Eureka Fleet Gains

The Humboldt Bay fishing fleet has been augmented recently by the registration of several boats from other points. Among the group is the new 23-ton *Tarantino, Jr.*, owned by Augustino Tarantino. The craft was built by the Makeley brothers at Fort Bragg.

Sea Breese, formerly of Tacoma, has been registered at Eureka by J. L. O'Connor, Jr., of Eureka. Sterling E. Alvin, Eureka, has homeported the boat *Porkey* in Humboldt Bay. From Ketchikan came the *Landie Lee*, now owned by Alf B. Anderson, of Miranda, Calif., inland town south of Eureka.

Heavy and consistent salmon operations found the strain telling on a number of boats working out of Humboldt Bay during the early season, with several going on the ways for repairs at the Gillette Marine Ways at Fields Landing. These included the 76′ dragger *Amak*, owned by Charles Ells; the *Imb*, owned by George Korkin, Trinidad; the *Muriel F*, owner Don Faye; and a boat owned by R. A. Crump, Crescent City.

The fishing craft *Sandra Jo*, out of Anacortes, Wash., ran into trouble along the northern California coast recently, off Cape Mendocino, and was towed to Eureka by the Coast Guard cutter *Balsam*. Aboard the disabled boat were skipper-owner Carl Wordsworth, Anacortes, and two crewmen.

THE COMPLETE YARD
CONSTRUCTION — REPAIR
DRYDOCKING
DESIGNERS and BUILDERS of Fine FISHING BOATS
SAGSTAD SHIPYARD
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PAUL CUTINA
Santa Rosalia
Monterey

DOM PASSANISI
Carmela Maria
San Francisco

—Photos by Caterpillar Tractor Co.

Hand Hurt in Winch

Sam Gradis, skipper of the Monterey purse seiner *Santa Anna* suffered a partial amputation of a finger when he caught it in a winch while seining for tuna in southern California waters. Mr. Gradis was later hospitalized at the Marine Hospital in San Francisco.

Tunaman Flown Home

Sam Gradis, skipper of the *Santa Ana*, was flown by PBM Coast Guard plane to San Diego for treatment of a severed and possible infected finger. The boat was fishing near Turtle Bay where the rescue rendezvous was made.

Net Gurdies Installed

Twin net gurdies have recently been installed on the **Rex.** owned by George V. Castagnola of Santa Barbara and on the Monterey boats **City of Pacific Grove, Two Nancies,** the **Riso Brothers** and **El Cerrito.** These gurdies are a specialty of the Lindwall Boat Works, whose owners also designed the gurdy. The same yard recently put aboard new net rollers on the **Mary Anne** and the **Louise D.**

The **City of Pacific Grove, Rex, Two Nancies,** the **Cecilia** and the **Riso Brothers** are turning in a good production of anchovies at Santa Barbara.

Beaching Saves Lives

Two San Francisco fishermen had a narrow brush with death when the salmon troller **Rosemary** struck a rock last month coming in through the Golden Gate.

Rosario Morello, skipper, and his boat puller John Saia, managed to beach the 34′ craft near the Fort Point life boat station, and wade ashore. A big hole was torn in the side of **Rosemary.**

METAL MARINE PILOT
for True-Course Automatic Steering

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$300
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THE FISHERMAN'S YARD
24-HOUR SERVICE • REPAIRS
1000-Ton Drydock • Marine Railways Complete Shops
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Fish Harbor — Terminal Island, California

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Standard Engineer's Report

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FIRM Joe Balestrieri, San Francisco, Calif.

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"WE'VE NEVER HAD TROUBLE with injectors or fuel system parts in the many years we've used Standard Diesel Fuel," says Joe Mezzina, Engineer of the M.V. Dorothy Ann. "This 110 h.p. Atlas works hard, too, bucking heavy seas and tides a week at a time without stopping. But because Standard Diesel Fuel is always delivered clean and burns clean, the injectors stay in perfect working condition. I haven't replaced a single injector in the five years the Atlas has been in our boat."

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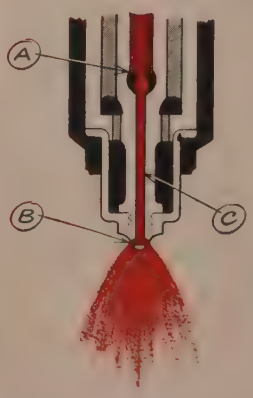

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C. Correct viscosity provides lubrication of fuel system parts—assures less wear, minimum leakage and clean injection cut-off.

STANDARD OIL COMPANY OF CALIFORNIA

Cordon Heads Interior Committee in Senate

Powerful position on the Pacific states in Washington received another lift this summer when Senator Guy Cordon of Oregon became chairman of the Committee on Interior and Insular Affairs.

With Senator Cordon the ranking Senator in affairs affecting Alaska and the ocean territories; and Congressman Thor Tollefson of Washington as chairman of the House Committee on Merchant Marine and Fisheries, the Pacific states' fisheries have great strength in Congress today.

Ralph Tudor Retires

Resignation of Ralph A. Tudor of San Francisco after a little more than a year of service as Undersecretary of the Interior is a real loss to the Federal service. He took the position with the specific understanding that he could only remain a year.

The time was short, but in it he accomplished a great deal, much of which does not appear on the surface. An engineer, he was particularly interested and effective in eliminating or straightening the bureaucratic by-ways of Interior.

Mr. Tudor is succeeded by Clarence A. Davis of Nebraska, who had been solicitor of the department.

The new undersecretary should not be confused with Raymond Davis of Seattle, who occupies a powerful but almost anonymous position in the service, as Assistant to the Secretary.

Hake Reduction Denied; Scrapfish Trial O.K.

Applications of two San Francisco firms, Northern Packing Corporation, and Winged Victory Fish Products Co., for permits to take 5,000 tons of hake for reduction into fish meal, were denied by the State Fish and Game Commission last month.

The department's marine fisheries branch was asked to do some experimental work to determine the number of hake in California waters, the best methods of catching and utilizing them, and the effects of a hake fishing operation on the state's fisheries as a whole.

A request by the San Luis Packing Corporation, Wilmington, for an experimental permit to develop use for ocean scrap fish was approved. The firm may take skates, rays, sharks, ratfish, carp, starfish, and other unutilized species. Not to exceed 100 tons of hake may be taken for experimental purposes.

What's the Sardine Outlook?

Slightly Brighter, With Aerial Scouts Spotting Some Schools

For the first time in more than two years a slight ray of hope, tinged with some skepticism has appeared on the northern California sardine picture in August, when an airplane, chartered by the Marine Branch, Department of Fish & Game, and manned with a competent observer, made scouting trips off shore from Hueneme, and found about 12 schools of sardines, with an estimated five to 10 tons in each school, and one school of about 30 tons. At the same time some 15 schools of anchovies were discovered. The fish were observed from a mile and a half to two miles off the coast.

A week later the same plane made similar observations, and it also appeared that there were more schools too deep for estimates of their size. Some of these schools might have included mackerel, according to Richard S. Croker, chief, Marine Branch, Department of Fish & Game.

It is a well known fact that sardine for bait has tumbled from a reported high of $420 per ton in southern California to around $80 per ton, and boats have been reported on 20 ton limits. For the first time in many, many months fresh sardines for bait have appeared in the Sacramento and San Francisco areas, indicating a good supply of bait sardines in southern California waters.

Mackerel catches have included some sardines lately, it was pointed out.

Two Monterey purse seiners, *Vitina A.*, Diego Arancio, skipper; and *New Roma,* Antonio Davi,, skipper, caught 30 and 90 tons of mackerel off Morro Bay and Avila, and at the same time observed sardines, and large anchovies.

Twenty-two purse seiners in Monterey are ready for fishing.

As far as the price of fish to the fishermen are concerned it is reported that one Monterey canner has offered for a limited time only, $80 per ton for jack mackerel, $70 per ton for Spanish mackerel, and $52.50 for sardines.

In tentative price discussions in Monterey boat owners have asked $75 per ton for sardines, while canners ideas appear to be about $45 per ton.

As *PACIFIC FISHERMAN* went to press the Monterey fleet was tied up, although the sardine season opened Aug. 1, because the boat owners hadn't been able to get together with the canners on price.

As of the early part of last month the following plants were reported ready to receive fish, California Packing Corporation, San Xavier Fish Packing Co., Edgewater Packing Co., Peninsula Packing Co., and Hovden Food Products Co., in Monterey and Santa Cruz Canning Co. at Moss Landing.

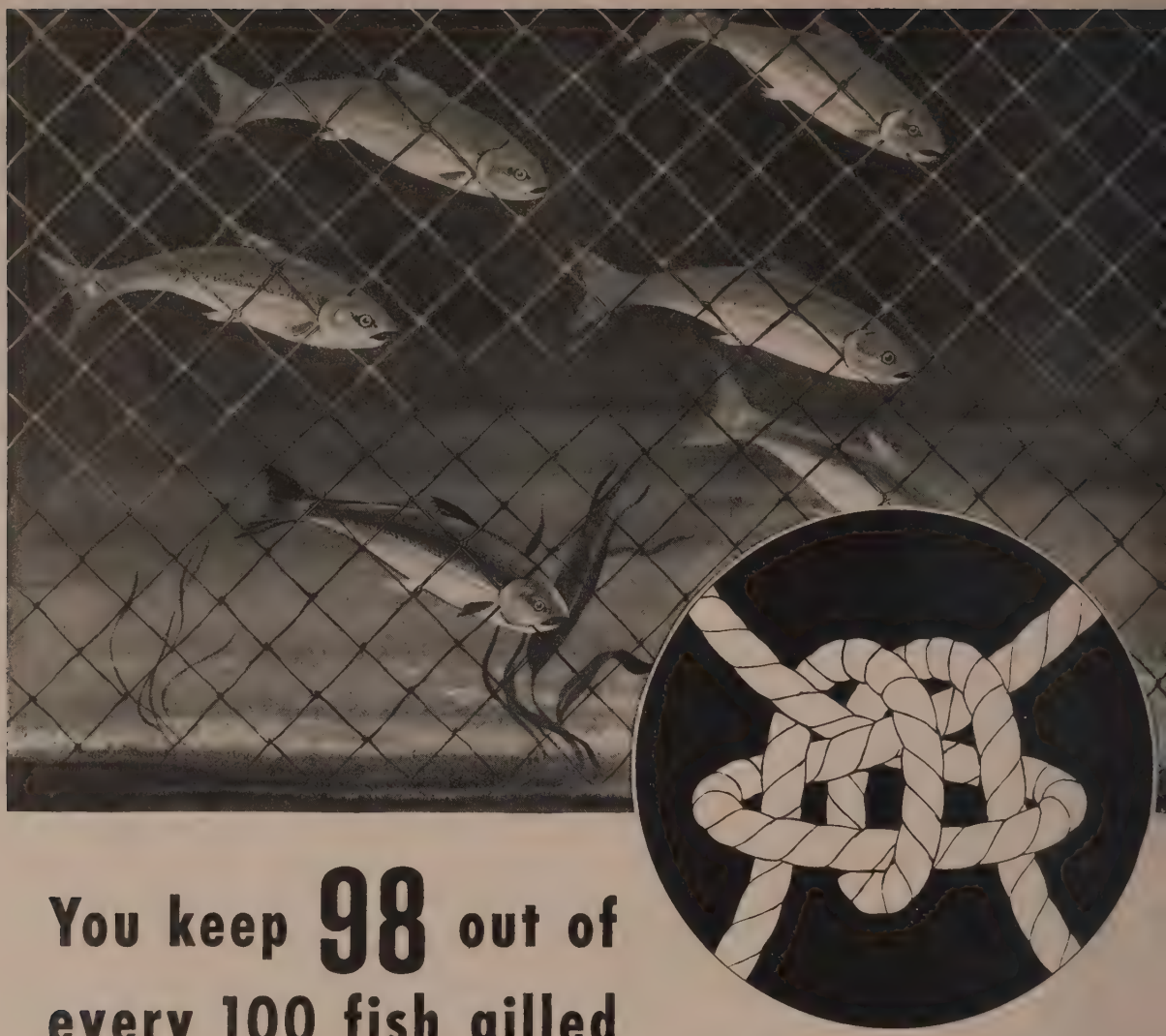
It was thought that fish will probably be landed at the unloading facilities at Avila and Morro Bay and trucked north to Monterey canneries. The cost of $9 per ton for trucking fish would be deducted from the net price paid fishermen, it was said.

E. B. Gross, Monterey Sardine Pioneer, Passes

E. B. Gross, 84, pioneer Monterey sardine canner and financier, died last month.

Mr. Gross came to Monterey when he was 17, and started driving a dray at $35 per month. By 1916 he had accumulated sufficient capital to allow him to enter the sardine canning industry just as it was beginning to boom under the need for food created by World War I. A year later he was operating two plants on Cannery Row. These plants were wiped out in a fire in 1925; but the next year he was ready to can again in a new plant. He became interested in banking and real estate and acquired vast holdings in Monterey county. His business acumen, sharpened in the catch-as-catch-can days of early Monterey, also stood him in good stead on Cannery Row.

He sold his cannery, the E. B. Gross Co., in 1943, just about the peak of the industry. He announced he was retiring from business, but instead he opened offices in one of his many buildings in Monterey and proceeded to strengthen his real estate holdings. Mr. Gross purchased important properties in San Jose and the management of these, together with his properties on the Monterey Peninsula, occupied almost his full time. He leaves a wife and two daughters.



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FLUCTUATING FISHERY STOCKS

What We Know About World-Wide Problems

By DR. L. A. WALFORD
Chief of Fishery Biology,
U.S. Fish & Wildlife Service

An address delivered to the Fishery Products Conference of the National Canners Association, slightly condensed.

MANY OF YOU are concerned about the condition of your fishery stocks, several of which seem to have receded to a low ebb of abundance in recent years. You are asking what has happened to Pink salmon, to Alaska herring, to Maine sardines, to the Pacific sardine, to the Gulf of Mexico shrimp. Are there fewer of them in the sea? Or have they perhaps retreated to distant, more obscure areas and become less accessible to fishermen? Whatever the nature of the condition may be, is it permanent? It is not only Americans who are concerned with these questions. So are people in other parts of the earth, for comparable conditions have occurred elsewhere, not only in California, Maine and Alaska, but also in such distant and widely separated places as Japan, India, Spain, North Africa. Is this all the result of mere coincidence? Could any important part of this effect have sprung from some common cause impelled by such a cosmic influence as weather, for example, which might affect these diverse species in a similar way? Are all these recent and current seemingly peculiar conditions within the range of normal variation? That last question is most important, because the seriousness of present conditions can be judged only in comparison with some standard; and that standard, which we call the Normal cannot be simply defined.

In the language of our everyday conversation, the word "normal" tends to have the rather fuzzy meaning of Things-as-they-should-be. Lucky is the "perfectly normal man" —there is nothing wrong with him. It will be a fine thing when "the country gets back to normal again," when our domestic and international problems have become resolved. When enough food is produced to feed the millions of hungry people of the world, they can enjoy "normal lives."— Those are conceptions we hear on every side. In its popular connotation, Normal is the good state of affairs, the good life. In the language of the statistician, it is something quite different — not nearly so cheerful a word, but very much exact. It is simply the average, the sum of all the items divided by the number of items—the lean years and the fat, the good and the bad, the tall and the short—whatever it may be that we are talking about.

We are talking about fishes and invertebrate animals that happen to be commercially useful for canning. Exact information about the history of these species is limited to relatively few recent years when they have lived under the pressures of intense fisheries. We know nothing about their fortunes under virgin conditions. (See Editor's comment below.) In those days, did they go through alternating periods of great abundance interspersed with periods of contrasting scarcity? What was their normal life then? We cannot tell. A great part of what we can learn now we must deduce from the catches of fishermen. Thus, in searching for normal patterns about the complex lives of fishes in order to understand the significance of events in a single year like the last, we must take into account patterns in the complex affairs of men. The behavior of fishermen fluctuates in response to economic conditions; and for that reason as well as others the intensity of fishing rarely remains constant long. Fishing techniques

EDITOR'S NOTE—

Dr. Walford apparently overlooks an instance in which we DO have some knowledge of the condition of a fishery which, if not actually virgin, was in fact barely above primeval conditions. Loyd A. Royal, director of the International Pacific Salmon Fisheries Commission, has had a search made of the archives of the Hudson's Bay Company in London, and has transcriptions of the journal of the H. B. C. factors at Fort St. James at the outlet of Stuart lake, one of the principal sources of the Fraser River Sockeye salmon. These records run back about 125 years to a time when the only fishery working on the Fraser Sockeyes was the negligible subsistence fishery of the Indians. The time of arrival of the Sockeye and the daily condition of the run at Fort St. James was carefully recorded by the factors of that day.

In these records Mr. Royal finds documentary evidence of the close timing of the Stuart Lake Sockeye run's arrival at the lake, then and now. He finds that there were failures in the unfished run of that day —years in which virtually no fish reached Stuart Lake. Thus he has evidence of wide fluctuations in abundance when there was no fishing at all; and strong proof that Hell's Gate operated as a barrier to certain runs of Sockeye under conditions prevailing from time to time 90 years before the Hell's Gate slide of 1913.

This evidence of fluctuations under aboriginal conditions supports Dr. Walford's position with respect to the effect of natural factors on the abundance of fish stocks.

improve, fishing fleets increase in size; markets change, etc. And because recorded history about these aspects of fisheries is usually exasperatingly fragmentary, it is difficult to draw absolutely certain conclusions about normal conditions of fish or of fisheries. This much, however, seems clear: conditions have rarely been "normal."

Fishery harvests are characteristically unstable, subject to irregular oscillations. This is illustrated in records of 150 years of Atlantic mackerel fishing, 50 years of American cod fishing, and 37 years of Pacific sardine fishing.

In 300 years of Japanese fishing for tuna, Skipjack, herring, squid, and saury periods of abundance alternate with periods of scarcity. Data are not statistically good enough to demonstrate any periodicity in these waves; nevertheless some Japanese scientists interpret that waves of maximal abundance have occurred about as follows:

Tuna 60 years apart.
Skipjack, 80 years apart.
Sardine 100 years apart.
Hokkaido herring 50 years apart.

Part of the fluctuations shown in these records reflects economic conditions, part reflects the degree of accessability of the fish on fishing grounds, and part—surely a very important part, reflects fluctuating abundance of the fish. Fishery biologists work continually to resolve these influences and have made much progress in that effort. They have long been in general agreement that fluctuations in environmental conditions cause fluctuations in abundance of the fish; but what elements of the environment are critical and by what mechanisms they affect the survival of fish, are problems that remain largely unsolved. As long as that is true, fishing must continue to be the uncertain occupation that it is. Agricultural Science is far ahead of fishery science in understanding the biology of the environment and making use of that understanding. But then, of course, the problems of Agriculture, difficult though they may be, are very much simpler than those of fisheries. For the farmer has the enormous advantages over the fishery man of being able to perceive his produce as it develops; and there are various things he can do to protect it when a period of unfavorable weather hits, such as a cold spell or a drought. Because the farmer can follow the viccissitudes of his produce with his eyes, he is constantly aware of what is happening on his land. He knows the limits of his piece of the environment and he can put a fence around it which will contain his crops and his animals; and therein they will stay until he is ready to harvest them.

The fishery man enjoys none of these advantages. The environment in which he is most interested—the body of water in which dwell the fishery stocks that give him his living, is continually moving, changing direction, position, levels. Now it is close to the shore; now far at sea, now at the surface; now deep in the depths. It expands and contracts, like a living thing; and as far as we can tell, the fishery stocks which it contains tend always to fill it to its capacity and to remain in it wherever it goes. But its capacity evidently also changes constantly. All the evidence which has accumulated about the natural history of aquatic animals indicates that their environments have limits beyond which they cannot stray very far. How can we define these limits? How can we distinguish a body of water which contains all the materials that attract mackerel from a body of water that repels them?

One of the most obvious boundaries of the territory in which an aquatic animal can live is temperature. Fish are exceedingly sensitive to temperature.

Sea fishes react purposefully to changes in temperature of only 0.03° C., and in salinity of 0.2 parts per thousand. These results indicate the extreme care with which field oceanographic studies must be designed, and the precision with which observations must be made at sea—the figures are close to the limits of accuracy of hydrographic instruments—in order to determine relations between oceanographic conditions and biological effects. They also suggest how some striking changes in marine climate that have been oberved in recent years can affect the fish directly. The distribution of marine animals is sharply limited by temperature barriers.

The distribution of sardines of the world shows sardines are somewhat less closely bound to land masses than are other members of the same family with which we are familiar, namely herring, menhaden and shad. Shad must ascend rivers to spawn; menhaden spawn about estuaries; herring in the intertidal areas; sardines may spawn as far as 200 to 300 miles at sea. Their young come close in, the first months of life along shore. The temperature range of sardines (about 12° to 20° C.) is intermediate between that of the menhaden and that of the herring.

Menhaden and similar fishes in general, require warmer water than pilchard can tolerate and they occur only in regions with extensive estuarine areas. They spawn in or near estuaries, and their young move into salt water sloughs and marshes and even up into fresh water during their early g r o w i n g period. Thus the growth and survival of menhaden are more affected by local conditions than is true of many other marine fishes. Inshore conditions of the environment are less stable than are those offshore, hence these fishes are more subject to violent fluctuations.

The herring is a cold water fish occurring only in the Northern Hemisphere, north of the range of pilchard.

The Pacific salmon can exist only where there is a peculiar combination of stream conditions and of oceanic conditions, as proved by the fact that although their eggs have been transplanted to many parts of the world, Pacific salmon have taken hold only where environmental c o n d i t i o n s approximate those of the North Pacific, i.e., New Zealand, Chile, Maine, New Brunswick. In streams, the optimal temperature conditions for the incuba-

EDITORIAL COMMENT—

Dr. Walford's discussion is of special interest because he is the chief of fish biology in the U. S. Fish and Wildlife Service; and because his thinking as expressed here is at rather sharp variance with much of that which has been—and to a large degree still is—prevailing in the Service's regulatory approach to the problem of rebuilding the Alaska salmon resource.

Currently, that regulatory approach continues to be fundamentally the same as that under which the fishery has declined—the empirical thinking that overfishing is the primary cause of declining abundance; and that numbers of spawners constitute the sole measure of recovery. Although it is obvious that spawners are necessary, today's administrative thinking appears to give too little attention to scientific studies which tend to show, as Dr. Walford emphasizes, that natural conditions can produce profound changes. Rebuilding on the basis of restrictive measures alone also overlooks the frequently-presented evidence of Dr. W. F. Thompson, director of the Fisheries Research Institute, indicating that the TIMING of the escapement and the productivity of its components is of greater importance than the NUMBER of spawners escaping.

Along with the administrator's emphasis on escapement should go application of the scientist's research on points of timing, productivity, predation and natural physical factors.

"Swallow" averages 250 days a year in North Atlantic fishing...

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There's no doubt about the performance of the 500 h.p. Superior engine aboard the *Swallow*. It's been proved by schedules of 25 to 27 trips yearly (8 to 15 days per trip) on rugged North Atlantic haddock and cod fishing runs.

In fact, the trawler's owners and operators—U.S. Shipbuilding Company—believe that engine performance is largely responsible for yearly high payload average turned in by the *Swallow*. "The truth of the matter is we couldn't live with an engine performance of lesser achievement," says Mr. Howard Francis, Port Engineer for U.S. Shipbuilding of Boston.

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The 500 h.p., 400 r.p.m. Superior Diesel provides the *Swallow* with a speed of 9½ knots. On 8-day trips, lube oil consumption averages a low 20 gallons! U.S. Shipbuilding's companion trawler, *Comet*, is also equipped with a 500 h.p. Superior and has turned an equally impressive payload record.

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tion period are somewhere between 4° and 11° C. Eggs suffer severe mortalities if subjected to excessive periods outside those limits. After hatching, the optimal temperature range which controls the growth and survival of the young lies between 13° and 17° C. Prolonged periods beyond these limits cause excessive mortalities among the young. In the ocean, salmon seem to be limited during their spawning and seasonal migrations to a temperature zone at the surface of about 0° to about 20° C. or at the surface from about 0° to about 20° C.

The cod family, which furnishes about 19% of the world's harvest of sea fish is widely distributed on continental shelves in temperate latitudes.

I have shown you that various groups of fishes are confined to certain types of environments and in particular to certain temperature zones. Is there any evidence that there could have been important changes in the location of the boundaries of these zones in recent years that might account for changes in accessability or abundance of the fishes? In places, yes.

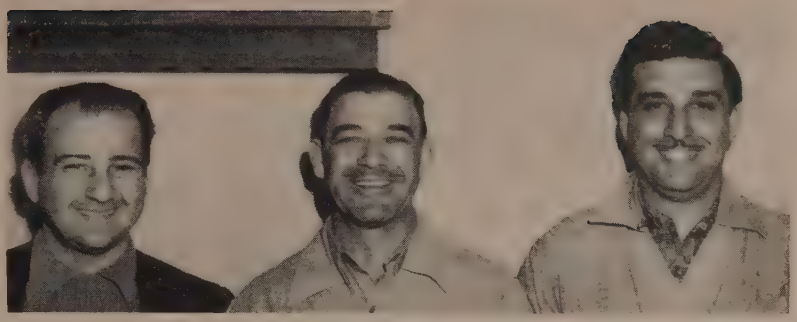
There are various ways by which climatic changes might affect food fishes. Most directly and simply, they could change the location of the environment having the physical characteristics to which these fishes are physiologically adopted.

If a fish feels uncomfortable because it is too hot, it will move into a cooler zone. This is probably true not only of fishes but of all other classes of animals. Warming encourages invasion by predatory species from warmer zones, and these drive out the former dominating residents. This sort of action may go on all the way along the food chain.

Another effect of changing climate is to stimulate diseases to burst into epidemic proportions. There is mounting evidence that fungi and viruses, which are very sensitive to temperature changes, sometimes severely decimate populations of marine animals and plants.

Striking examples of changing distributions are given by the spread of the mussel parasite and the green crab in the North Atlantic; the Northward spread of the cod into the arctic; the return of menhaden to the Gulf of Maine; the shift in composition of the species of shrimps of the Gulf of Mexico, and of shads off the coast of India.

Biologists have been rather slow to become aroused to the possible significance of these changes. Those in countries bordering the Atlantic were first to become interested, perhaps because the effects are more striking in the North Atlantic. Gradually this interest is spreading to other parts of the world, and scientists are beginning to consider the possibility that we are dealing with a world-wide phenomenon.



Frank S. Alioto, Joseph B. Balestrieri, and Vincent S. Fradella, partners in Harbor Fisheries, new San Francisco wholesale house.

Last-Word Refrigeration Features Harbor Fisheries

Three San Franciscans, young in years, but with plenty of savvy in the fish business, are now wholesaling fish from their new and modern plant at the foot of Hyde street, next to the old auto ferry slip.

Compact refrigeration installations in Harbor Fisheries, San Francisco. Upper picture shows the York Flake-Ice machine topping one of the cold rooms and discharging its ice to a storage compartment. Below, the two York units which refrigerate the cool and freezing rooms.

The young men are Frank S. Alioto, Joseph B. Balestrieri, and Vincent S. Fradella, and the name of their concern is Harbor Fisheries.

Frank was with Standard Fisheries for eight years, and before that with Consolidated Fisheries, Inc. Joe was with Standard Fisheries for 20 years, and Vince has been hauling fish from various up-state coastal points to San Francisco for a long time. Frank takes care of the books, Joe deals with the fishermen and has charge of the plant, and Vince has charge of sales and delivery.

Harbor Fisheries is housed in an attractive new frame building, and at the present time the partners are specializing in fresh and frozen fish, crabs, and will undertake carload shipments of fresh and frozen fish outside of California.

Fish are received from the slip alongside the pier on which the plant is built, and are unloaded with a new electric powered steel hoist.

At the present time the partners have one drag boat fishing for them —*Jolly Roger*, shippered by E. Recchoni, San Francisco. However, it is expected that a couple more draggers will be contracted.

The refrigeration system is one of the most modern in northern California. It was engineered and sold by Scatena York Co., San Francisco, a firm that has made a specialty of fisheries refrigeration for many years.

Outstanding feature of the refrigeration system is that it has automatic defrosting in the freezing room, which does away with water or electricity, thus saving labor and electricity costs.

The cool room, with a capacity of about 10 tons of fish, is refrigerated with a York 1½-hp. air-cooled unit. The sharp freeze, with capacity of 15 tons, has a 2-hp. York air-cooled unit, with a Kramer automatic defrost system.

There is also a York Model DER12 flake-ice machine, providing ice for boxes of fish.

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MIDDLE MANAGEMENT Advisory Board of the Van Camp Sea Food Co. in session in July: left to right, John Fugatt, laboratory; Noah Decker, maintenance; Willie Stephan, plant superintendent; Jay Harris, sales; Leonard Powell, warehouse; Robert Ballmer, fleet accounting; John Fulton, accounting (chairman); George Courtney, production; Marty Quamma, San Diego timekeeper; Max Boyer, traffic manager; Charles Conklin, timekeeper, Terminal Island; Charles Buchan, purse seine fleet manager.

How Van Camp Invites Ideas

"Middle Management" Advisory Groups Build Men, Morale and House Unity

One of the oldest tuna canners in the industry is proving that packing tuna is not just a matter of successful fishing and canning technique. The Van Camp Sea Food Co. is practising the philosophy that "Business is People" through a plan based on the Multiple Management Plan of the McCormick Co.

Gilbert C. Van Camp, president of the company, became interested in this plan, as stated in a book called the "Power of People" in 1948 and in that year adapted it to the problems of producing "chicken of the Sea" brand tuna and other Van Camp products.

The heart of the plan is the participation by junior management and plant supervision in recommending policies, programs and procedures helpful to any phase of the Van Camp Sea Food Co. business.

In 1948 a group of eight junior executives formed the first advisory board. The number of members was later increased to 12. Every six months three members drop out and three more are elected. Period of services does not exceed two years. Excluded from this board at all times are officers of the company, members of the board of directors and department heads.

Essentially, this board and the two Plant Boards at Terminal Island and San Diego are idea-creating for constructive thinking by Middle Management in the production, research and selling of canned tuna and other fish. The boards also serve as a medium for training and developing Middle Management to qualify for assuming larger authorities and responsibilities, and they assist Mr. Van Camp in evaluating the abilities, capacities and progress of Middle Management.

Minutes and recommendations of the Advisory Board, which meets every week, are submitted to Mr. Van Camp, who, after study, either refers recommendations to the appropriate department for action, or back to the Advisory Board for further consideration.

The department manager must eith-

TOP MANAGEMENT at Van Camp Sea Food Co. Here Gilbert C. Van Camp, right, company president, congratulates Harry C. Wood, assistant treasurer, as he celebrated his 35th anniversary with the house.

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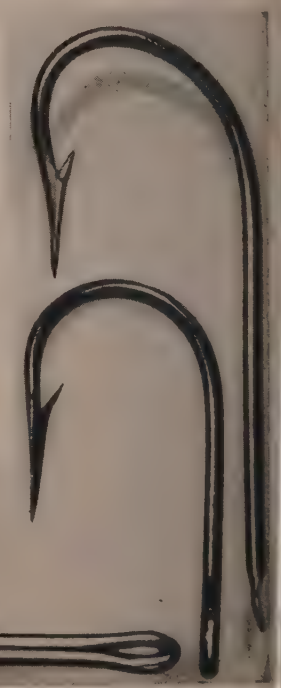

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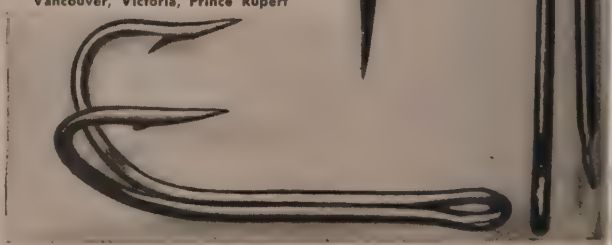

er put the recommendation into effect or inform Mr. Van Camp in writing his reasons for not initiating action on the recommendation. Should the recommendation be rejected, it is reviewed by Mr. Van Camp with representatives of the board or by the board and the department manager at Mr. Van Camp's direction.

The Plant Board at Terminal Island consists of 12 members, elected on a rotating basis for terms of 18 months; that at San Diego consists of eight, elected also on a rotating basis, but for 24 months, from supervisory positions. Here again no member of the Board of Directors or top management can become a member of the Plant Board, nor is the plant superintendent or a member of the Advisory Board eligible.

These plant boards are responsible to the executive vice president Gilbert Van Camp Jr., and serve as a direct channel to top operating management for constructive group thinking in the problems of fish canning and production supervision. Specific recommendations are made in writing to the executive vice president involving improved policies and procedures relating to facilities, equipment, materials and operations of the plants.

Bulge in Mackerel Brings Bid-Price Drop

After being practically a wash-out during the first six months of 1954, with a catch of only 2,025 tons; 39,871 cases, the Southern California mackerel fishery showed an upsurge in July; so much so, in fact, packers stopped all mackerel fishing on July 24, at the prevailing raw price of: $85 for Pacific and $80 per ton for Jack.

Actually, compared to the past few years of great mackerel fishing, the month's catch was not sensational, being 5,044 tons, from which 85,766 cases were packed. Last year to July 31, mackerel had reached nearly 23,000 tons, and half a million cases had been packed.

On July 24 Southern California canners notified the Fishermen's Cooperative association of San Pedro and the mackerel fleet, that further deliveries could not be accepted at the prices that had been in effect since October 12, 1953.

The local mackerel fleets have been facing growing competition from foreign imports of canned mackerel from Japan and South Africa, the product clearing through both Gulf and eastern ports, for the accounts of California packers. It was reported the latter enjoy a considerable price advantage selling the imported product in southern and eastern markets.

Milton James Opens INPAC Headquarters

During the first week in August, Milton C. James, who has been living in Olympia, Wash., and serving as consultant to the state department of fisheries, assumed his new duties as temporary executive director of the International North Pacific Fisheries Commission. An office at the University of British Columbia, Vancouver, B. C., has been established in the Westbrook Building, and the Commission's affairs will be directed from there, at least for the time being.

Mr. James, who will organize his staff at Vancouver during the next few weeks, has a long record of experience in fishery investigations in the United States and served as a commissioner on the International Halibut Commission. He was formerly assistant director of the U.S. Fish and Wild Life Service. He agreed to take on the Vancouver office until a permanent appointment could be made by the Commission.

Ceepeecee Plant Burns

Nelson Bros. Fisheries reduction plant and auxiliary buildings at Ceepeecee on the west coast of Vancouver Island were destroyed by fire late in July. The company's customary herring operations at that point will be suspended during the coming fall and winter.

Whether the company will rebuild has not yet been decided, according to President Richie Nelson.

The Ceepeecee plant was the only one being maintained by Nelson Bros. on Vancouver Island, although it has plants at Port Edward, near Prince Rupert, and on the Fraser.

B. C. Whales Yield Food for U. S. Minks

One of the developments in British Columbia's whaling industry that shows promise of expansion is production of frozen meat for mink food, most of which is exported to the U. S.

This season it is expected that the Coal Harbor plant of B. C. Packers on Vancouver Island will process 1000 tons of whale meat which will be shipped frozen. This represents an increase of about 100% over the previous year.

Although the whaling fleet had caught 451 whales by July 23, considerably more than for several seasons, operators stated that since the season opened two weeks earlier this year and a sixth vessel had been added to the fleet, the increase did not necessarily indicate a greater abundance of whales.

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Van Camp Resumes Canning at Astoria

Columbia River cannery of Van Camp Sea Food Co. went on stream again early in August after being shut-down since last November.

The plant began operations on a cargo of 900 tons of Yellowfin and Skipjack tuna brought from Peru by the refrigerated *Puerto del Sol*, owned by Sun-Pacific, Inc. The 208' freezer-ship was built in Canada in 1942 as a corvette and is powered with a 1,000-hp. Enterprise diesel.

Don Doran, manager of the Astoria plant, put a crew of 160 people to work in the plant. Whether operations would be maintained beyond the supply of tuna delivered by *Puerto del Sol* he could not say.

Way Clear for Wide Use Of Bellingham Sole

Bellingham sole, a variety of flatfish common in Puget Sound, and also found in coastal waters, has been added to the list of food fishes which may be used for any commercial purpose in the State of Washington. This clears the way for use of this variety for food for fish or fur animals, as well as for reduction purposes.

Liberalizing action with respect to Bellingham sole was taken because the fish has very little use marketed in fillet form and stocks have tended to build-up excessively on trawl grounds as result of the draggers' inability to find markets for the variety as foodfish.

Bioproducts to Enter Fish Solubles Field

Installation of modern stickwater evaporating equipment at the Warrenton, Ore., plant of Bioproducts, Inc., was completed late in the summer. This puts the firm into a new phase of fish reduction. The plant hitherto has produced a broad line of vitamin oils and concentrates, high-potency fertilizing solutions from digested fish offal, oils, meals and such specialties as aquarium foods.

The evaporating equipment installed originally was in the plant of the Del Mar Canning Co., nearby; but was moved to California after fire destroyed the Del Mar plant; and now returns it to the Columbia River within only a few hundred yards of the point where it first went into operation.

Lobster Yield Poor

Lobster boats out of Santa Barbara found the past season poor in comparison to last year, according to Lloyd Lindwall of the *Linda*. The *Rita B*, Haley Aycock, is considered high boat, with about a 14-ton production.

"Bumble Bee" Case Colors Are Keyed to Contents

Fibre cases used for *Bumble Be* brand products of the Columbia Rive Packers Association currently ar keyed by color to their contents. Thu each of the principal *Bumble Bee* pro ducts has its own distinctive case co or, which also is keyed to the basi color of the label.

Another development in the C.R.P A. warehouses is the plain markin by the manufacturer of the numbe and size cans which the case contain This may seem superfluous, but Fre S. Sandoz, sales manager, reports tha it saves mistakes and confusion i warehousing and shipping where pe sons handling the goods are not fa miliar with the size and number o cans contained. The data appea plainly printed on each side of th case, so it cannot be concealed in pi ing.

Milo Moore Honored

Milo Moore, former Washingto director of fisheries, recently wa awarded a cup and testimonial docu ment by Seoul, Korea, for his wor in rebuilding and rehabilitating th fisheries and facilities of the Korea capital. His chief of the fisheries d vision of the United Nations Korea Reconstruction Agency.

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FOOD FISH MARKETING

Section of PACIFIC FISHERMAN--

News and Views of National Trade in Fish and Shellfish

September, 1954

Sharp-Breaking Surprises—

How Production Variables Kept Salmon Market Pattern Obscure

Production variables springing surprises beyond the normal performance of the volatile salmon industry marked the 1954 season. Just when you thought you could begin to trace the trend, the situation reversed and something new cropped-up somewhere else.

As result, salmon market pattern and prices had not emerged at press-time, and as these words were written eyes of all concerned with salmon were fixed on production rather than on the sales department.

Opening pricing of the major Red salmon factors was awaited with interest rooted in the pocketbook. It was evident by that time that the Alaska Red pack could not reach adequacy.

There was talk of tentative offers of Red talls at $28 for favored brands, with $27 quotations quite general among the rank-and-file of sellers. Observers were inclined to feel that pricing would not depart far from these figures.

Freezerships had reached Puget Sound as this was written, and they were expected to provide a substantial segment of the total Red pack, but no indications of their probable pricing had been given.

With Pink production definitely down from earlier prospects, quoters held their pricing to the $19 mark, regardless of the long $4 stretch between Pinks and Chums. Deterioration of the Pink situation found plenty of doubters, who were inclined to believe that the spread of $1 per dozen between Pinks and Chums might well be maintained.

Trading in Chum talls at $15 was reported excellent for so early in the season. Reason probably lay in the superlative quality of the early Chums and the desire of smart buyers to place their orders when they could be sure that they would be filled from those big, early Chums.

They were protected against decline for 60 days, and Chums which run as large as six to a case and oil like Sockeyes can be mighty attractive if the year winds up with Pinks short.

Pink halves, which have become quite popular in recent years, appear certain to be short.

British Salmon Buying Tied to Dollar Balance

Lifting of controls in the United Kingdom and the abandonment of bulk buying in favor of commercial purchases as before the war may not result in an immediate substantial improvement in sales of British Columbia canned salmon overseas, although packers are generally glad that more freedom will prevail in the market.

Imports to Britain will now be governed by the Board of Trade quota system instead of by the Minister of Food, and the new quotas are likely to be only slightly higher than the former bulk purchases. Best prospects for an increase in sales of Canadian salmon in the United Kingdom probably lie in the fact that general economic conditions have improved immeasurably in recent months, and the British consumer is able to pay more for his food. A dispatch from London recently reported that starting in October, "British mothers in the Midlands will be able to go back to their old pre-war routine—Canadian tinned salmon for Sunday night supper."

Purchases of Japanese salmon will probably account for some of the increased British buying, since Japan is to be placed on a quota basis when bulk buying is discontinued and since the war Britain has not been buying any Japanese salmon. Most of the United Kingdom's canned salmon purchases last year and so far this year have been from British Columbia; the balance was from Russia.

Tuna Market in Flux

While inventories of canned tuna in packers' hands were increasing in early August, the general opinion was that the 2,000,000-odd case build-up was not excessive. The entire California pack was 1,000,000 cases ahead of last year's pack for seven months.

However, what packers feared was the great potential tonnage during the late summer and the fall.

There is now no doubt that canned tuna slackened off sharply in sales during May, and the later pick-up had not been enough to clean out stocks to make way for the tremendous summer crop. Sales to early August were considered to be up to last year, with the exception of the May slump.

Wholesale quotations, f.o.b. west coast, were in considerable confusion as summer waned. Competition from meat, said up 10% in sales and with prices down, and with markets glutted with poultry, canned tuna was facing stiff competition.

Quarter-Pound Packs Command New Interest

Canners on the Columbia River report a growing and sharpening interest in quarter-pound cans of salmon and tuna. This report is confirmed as to salmon by a number of Puget Sound operators.

Prediction that the production of Sockeye and Coho quarters will be above usual seems well-justified.

Columbia River Packers Association in August announced a new item: chunk-style White Meat tuna in quarters. They believed this was the first time that this particular item had been offered to the trade.

Anchovy Pack Under One-Third of 1953

California's anchovy fishery was in sharp decline as the second half of 1954 proceeded. Last year it had been of considerable importance, 30,631 tons having been delivered to August 1, and 1,131,071 cases packed. For the same period this year, 10,539 tons had been brailed and 340,792 cases processed. Packers declare there is considerable sales resistance to this pack.

Wilbur-Ellis Co. Buys Reinke & Amende, Inc.

Reinke & Amende, Inc., well known Los Angeles and San Francisco frozen food brokerage house, became a division of Wilbur-Ellis Co., national and international sea products factors.

As in the case of Marine Products Co., San Diego, which was purchased by Wilbur-Ellis Co. in 1949, this new addition to WECO will be operated as a separate corporation and for the time being will continue in its Los Angeles office in the Overland Terminal building.

In San Francisco offices are now in Wilbur-Ellis Co. headquarters 320 California St.

Reinke & Amende was incorporated in 1940 as Reinke, Hiller & Amende, Inc. In 1945 Mr. Hiller retired from the business and the name was shortened to its present form. The firm's business has grown through acquisition of exclusive sales agreements with such producers as Marine Products Co., San Diego; Coldwater Seafood Co., New York, cod, haddock and halibut; Jess Ranch, Victorville, Calif., trout; Veterans Abalone Co., Newport, Calif., Reliance Shrimp Co., Cascade Frozen Foods, Burlington, Wash., and other non-sea food producers.

Reinke & Amende will now take care of the following exclusive Wilbur-Ellis accounts: Kayler Dahl Fish Co., Seattle, halibut, salmon and shrimp; E. Paturel, Ltd., New Brunswick East Coast lobsters; Seafood Specialties Co., Newport, Calif., abalone; Drape Scallops, New Bedford, Mass.; and North Western Fisheries, Boston, cod, haddock and perch.

Ed Amende is no longer associated with the firm, having chosen to enter the frozen food brokerage field on his own account. Miles Reinke, however, will continue in charge of the business in collaboration with Bob Young.

Japanese Canned Albacore Price Cut by $1.30

Tokyo Canned Tuna Sales Co. in midsummer ended a 3-months price freeze by announcing a "special sale" price on 200,000 cases of canned Albacore out of its total inventory of some 500,000 cases, according to advices from *Pacific Fisherman's* Japnese correspondent.

The list price was reduced for the "sale" by $1, plus a 30c promotion allowance.

At the new price two of the major exporting firms, Daiich Bussan and Mitsubishi Shoji, reported substantial movement.

The reduced price on Albacore followed by some weeks a 50c reduction in the price of canned Light Meat tuna, which had produced very satisfactory movement of this item.

British Buying Crab From Japan This Year

British purchase of Japanese canned crab this fall and early next spring is anticipated in Japan according to Pacific Fisherman's Tokyo correspondent as result of the invitation of the British government for Japanese crab sellers to apply for U. K. import authority.

Japanese commercial comment runs along these lines:

"We cannot expect much in the point of quantity because Russian crab has been selling as low as $16-17, while the present market for Japanese canned crab stands around $27-27.50. This would mean that Fancy grade will still go mainly to the U. S. and only P. A. class of King crab and other crab such as 'Kegani' (Hokkaido hairy crab) will be available for export from Japan to the U. K.

"Japanese canned crab has hitherto been dependant exclusively upon the U.S. market. It is highly significant that these goods have now found a new outlet beside the U.S."

Mackerel Price Cut Forced by Dull Trade

Van Camp Sea Food Co. is offering $50 a ton for Jack mackerel, as this issue of PFN goes to press. This is a drop from the $80 per ton price which has prevailed over a year.

Mackerel production by Southern California boasts in July amounted to 5044 tons and represented a tremendous increase over the lean months of spring and early summer.

Other canneries in Southern California, which customarily can mackerel, have also curtailed or ceased entirely their purchase of Jack.

Not only competition from imports of canned mackerel, sold at a greatly lower price per case than local, but the discouraging situation of a diminishing demand, domestic and foreign, for sardines and mackerel would appear to account for the current mackerel slump.

There is no doubt that the Southern California fishing fleets are being hard hit in every direction—no sardines; canneries' refusal to buy mackerel; and a $30 cut in the price of tuna.

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Parrott Buys Dempsey Interest in Hickmott

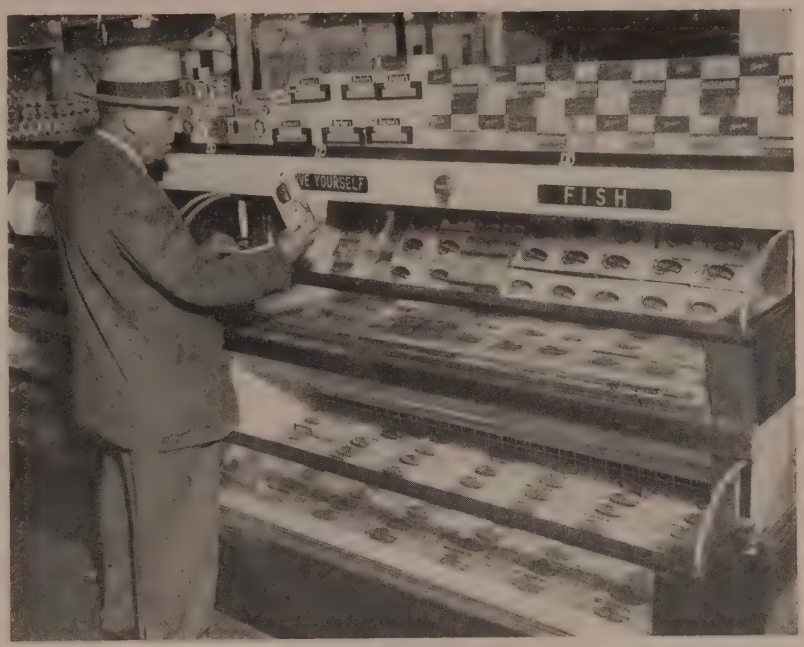
Parrott & Co., San Francisco processed food factors and distributors, has taken over the interest of J. H. "Prince" Dempsey in the Hickmott Canning Co., Antioch, Calif., and will continue to operate the plant.

Johnny Havens, well known in the California canning industry, will be general manager; responsible for quality is Ted Paulsen, who has been superintendent for the past three years.

Mr. and Mrs. Dempsey are presently on a six months European tour. Mr. Dempsey was a particularly active figure during the hey-day of sardine canning in California.

Army Tuna Order Split

A bid for approximately 110,000 cases of standard tun. a½s round, was awarded last month to two independent packers of Terminal Island, by the U. S. Army Quartermaster Corps. Price was not announced. Splitting the order about down the middle were, Pan-Pacific Fisheries, Inc., and California Marine Curing & Packing Company.



Men do a lot of the food shopping in Southern California supers, market studies show; and this is particularly true of the packaged frozen fish departments, sales analyses showing that men make a substantial percentage of the purchases of the frozen fish. Here is one in the thoughtful, studious examination of the label characteristic of packaged frozen fish buying, whether in California or Connecticut.

Sharp Revival Noted In Steelhead Exports

Marked revival in the European demand for round frozen Steelheads is noted by Columbia River operators with freezing facilities and a taste for the export trade. Volume is said to be back to before-the-war times, and even to bear some resemblance to that of the days when France and Germany got almost the entire production of this giant trout.

France still likes her Steelheads small, in two catagories, from 4 to 6 and from 6 to 8 lbs., round, of course. Germany, Belgium, and to some extent Sweden, favor the larger sizes.

B. C. Fish Stick Packers Study Market

Whether B. C. Packers Ltd. will graduate from batch to continuous processing of fish sticks will be determined by market developments, company officials state.

Facilities for producing fish sticks on a small scale have been in operation at the company's Imperial Plant, Steveston, since June, and it is the company's intention to expand during the next few months—if the market is sufficiently favorable.

In Vancouver and other cities of Western Canada the number of apartment dwellers, who comprise the major market in U. S. cities, is limited, and export opportunity is limited by U. S. tariff. However, British Columbia operators are not overlooking the sensational success of this product in the U. S. and they are prepared to expand production to meet any rise in market, if Canadians can be won over to consume fish sticks in adequate volume.

Amende Opens Brokerage House of His Own

E. E. Amende, formerly associated with Myles Reinke in the frozen food brokerage firm of Reinke & Amende, Los Angeles, has established his own house at 337 S. Anderson, Los Angeles.

He is now representing, on halibut, the Sitka Cold Storage Co. and the Aleutian Cold Storage Co.; and has taken on shrimp from the Buquet Canning Co. of Homa, La. Mr. Amende plans to expand his line within the next few months.

Frozen "Fillet Burger" Packed by Berkoff

A new fish product, primarily for the restaurant trade, has made its appearance in the Los Angeles market. It is the Fillet Fish Burger, a patty product of the Berkoff's Food Products.

Mr. Berkoff states that the appeal of the product, which uses cod from the Northwestern waters, is that of portion control. It gives the restaurant chef a patty all ready for grilling or deep frying, with no waste. Mr. Berkoff is using cod frozen in 5 and 10 lb. blocks.

After slicing, the frozen fish is ground and the ground material is added to a batter mix and blended with eggs, potatoes, seasoning, onion powder and crackermeal. The patties are formed in a press, which permits precision molding of the patty, with an automatic paper feed that provides the waxed paper separations for each patty.

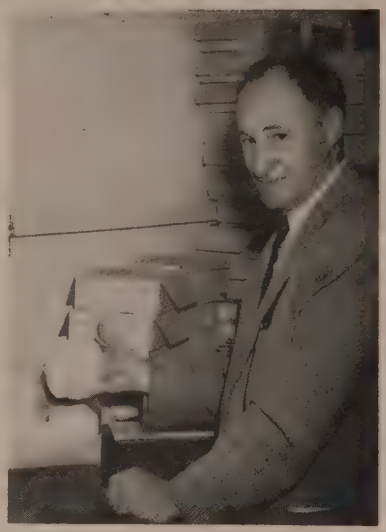
The burgers are partially cooked by a steam process. After machine-forming, the patties are stacked six deep, and are wrapped in vapor-proof wraps, double-weight waxed paper, four to a group. They are then packed 24 to a carton and sharp frozen.

Each burger is 3¼" in diameter, ½" thick, 2 oz. in weight.

The Fillet Fish Burger is also a product that adapts itself well to home freezers, giving the housewife a product which takes only minutes to prepare.

Swordfish Imports

Imports of Broadbill swordfish for the first six months of 1954 into California totaled 1,159,197 lbs., of which Japan sent in 1,108,017 lbs. and Peru, 51,180 lbs. In recent years the domestic catch of Broadbill off Southern California and northern waters of Mexico has declined until it is no longer an important fishery, and reliance is now on imports.



The inventor, producer and marketer of Berkoff's Fillet Fish Burger displays a wrapped sample of his wares.

Shrimp Operation Limited

Limited shrimp operations were in progress this spring along the northern California coast, chiefly in the vicinity of Crescent City.

Shrimp catches were being shipped by truck to the Lazio Fish Co., Eureka, and were being processed by the Lazio concern chiefly to yield a cocktail item.

Ralph Berglund Undertakes Maine Sardine Research

Ralph M. Berglund, formerly in charge of the technological laboratory of Pacific American Fisheries, Inc., at Bellingham, has accepted appointment as project leader in a cooperative project entered into between the Fish and Wildlife Service's Branch of Commercial Fisheries and the Maine Sardine Industry, composed of Maine sardine canners.

Purpose of the project is the development of research and technological data and procedures designed to improve the quality of Maine sardines.

Mr. Berglund's headquarters will be at Boothbay Harbor, Me.

He is widely known in the field of fisheries technology for his work at Bellingham, where he directed technological investigations of substantial interest and achievement.

Lobster Seasons Closed

Both the California and Mexican lobster seasons are closed and will not re-open until this coming October. Catches from local and Baja California waters were larger than last year.

Fishway to Aid Sockeye

The Canadian government plans to improve its fishway facilities at Stamp Falls on the west coast of Vancouver Island by construction of two additional ways. The estimated cost is $100,000, and the new project is designed to benefit the Sockeye run.

WESTGATE-CALIFORNIA TUNA PACKING CO.
28th Street and Harbor Dr. San Diego, Calif.

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Pink Salmon
KELLEY-CLARKE CO.
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Oyster Revival Sparks Up-Swing In Morro-Avila-San Luis Sector

Oystermen at Morro Bay, Calif., believe they will have 75,000 bushels of oysters ready for market in the fall of 1954, and that thereafter their area will recapture the position it once held in California oystering.

Two thousand cases of imported seed were planted in Morro Bay during the early spring of 1953, and these are expected to be ready for market this fall, at the rapid rate-of-growth which smaller experimental plantings have demonstrated in the past.

Among the oystermen operating in the area are: Horn & Rietz; Demetriff Bros.; Brown's Oyster Farms; Allen B. Campbell Jr.; and Orville and Mrs. Agnes Leage, who now have the El Morro Oyster Co.

Brown's Oyster Farms, W. C. Brown, and his son Frank, are planning on selling their oysters to a cannery which has been built at Grover City, just south of San Luis Obispo.

Producers will get $1.50 per bushel in the shell for their oysters, and the cannery will do the shucking, according to W. C. Brown.

Ralph L. Horn and W. C. Rietz have sold the processing end of their business to the Leage Oyster Co. of Bay Center, Wash. (Orville Leage and Mrs. Agnes Leage) but they have kept their beds.

Mr. Horn formerly operated the Star Oyster Co., Raymond, Wash., and also operated at Bay Center, Wash., in 1937 and 1938. He was formerly a commercial fisherman and in 1949 stopped in at Morro Bay, liked the looks of the place, and dropped anchor.

Mr. Rietz was also a commercial fisherman, and met Mr. Horn at Morro Bay. Incidentally, Mr. Horn had the boat **Kiska** and developed the otter trawl net now known as the Kiska net.

Mr. Rietz came to Morro Bay shark fishing in 1946 on his boat **Nekas** from Newport, Ore., and in 1947 settled there permanently.

They have Johnson and Mercury outboard engines for propelling their barges.

Allen Campbell Jr. is a relative newcomer to the oyster business, having just started three years ago.

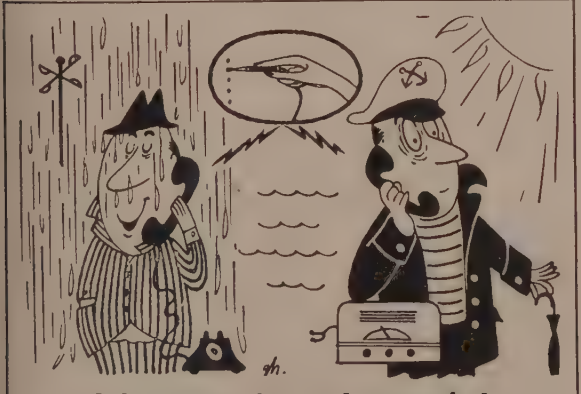
A few miles south of Morro Bay is Avila and San Luis Bay, spots where quite a little Albacore is landed in season.

At Grover City a few miles south of Avila is the Midway Packing Corporation. This company took over the equipment and plant of the former Golden State Packing Corporation. President is A. E. Eder, E. C. Ortel is vice-president; John Kuhns, secretary; and Joseph Tagle, treasurer.

The Midway Sales Co. of which Mr. Ortel is president will pack some of the oysters grown at Morro Bay, producing canned oysters and oyster stew.

The company will also pack tuna, sardines, anchovies, under its own and buyers labels. The capacity of the plant is 40-50 tons of tuna per day, and 40 tons of anchovies.

The plant is inland and fish will be trucked to it. Equipment consists of eight American Can Co. closing machines for ½-lb. tuna, 5-oz. anchovies, and 1-lb. tall cans. There are three Standard Steel Co. retorts, and three tuna cookers, as well as the necessary equipment for pack-



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COHOE
"Olympic"—"Ocean Spray"
"Green Breaker"

PINK
"Waterfall"—"Ocean Blue"

CHUM
"Golden West"—"Golden Glow"

Cannery: ANACORTES, WASH.

ing anchovies. Anchovies have already been packed.

Tuna will be hand packed at first

ON MORRO BAY

Up top—Frank Brown and his father, W. C. Brown, of Brown's Oyster Farms. Middle—W. C. Rietz, who is in the oyster business as Rietz & Horn. Bottom Pair—Allen Campbell Jr., and Ralph Horn, who formerly trawled with the "Kiska" and now grows oysters with W. C. Rietz.

but it is planned to get a packing machine to pack chunk style.

Mr. Eder, president of the company, is also production manager. He was formerly with Pan-Pacific Fisheries, Inc., and California Marine Curing & Packing Co., Terminal Island.

Mr. Ortel was formerly with Franco-Italian Packing Corp., Terminal Island, in charge of the office, boats, etc.

Mr. Kuhns has had much experience in fish plants and was in charge of remodeling the Midway plant which was formerly a tomato cannery.

The brands under which their products will be sold are: "Midway," "Spy Glass," and "Blue Horizon."

Skipper's Father Dies

Giovanni Alioto, father of Capt. Joe Alioto, skipper and co-owner of the San Diego tuna clipper *Marilyn Rose*, died at San Diego recently.

Combination Designed For Salmon, Tuna and Crab

Frank Pasquinucci, Sausalito Boat Works, Sausalito, Calif., has just completed a new 36 x 12′ combination boat for his own account.

The craft is powered with a 165-hp. GM diesel completely rebuilt by West Coast Engine & Equipment Co., Berkeley. The engine turns a Coolidge propeller on a Monel shaft through a 2-1 Twin Disc reverse and reduction gear, giving the craft a speed of about 10 knots.

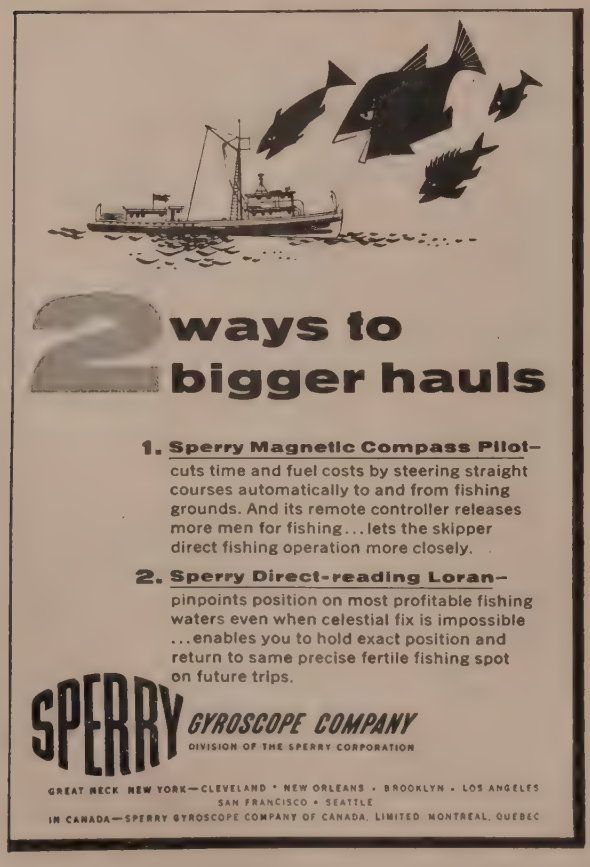
There are two bunks forward. There is a flying bridge with dual controls.

The new boat has a transom stern and can carry 10 tons of fish in the hold. She is painted throughout with American Marine Paint Co. paints.

Joe Balestrieri Retails At Eureka Plant

Joe Balestrieri Fish Co., with headquarters in San Francisco, has opened a retail fish department at its Eureka plant.

General manager of Eureka operations is D. L. "Blackie" Selvaggi, who has been in the Eureka fish business for the past 30 years. Blackie was with Lazio Fish Co., Eureka, for 12 years before joining Balestrieri.


2 ways to bigger hauls
1. Sperry Magnetic Compass Pilot—
cuts time and fuel costs by steering straight courses automatically to and from fishing grounds. And its remote controller releases more men for fishing... lets the skipper direct fishing operation more closely.
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pinpoints position on most profitable fishing waters even when celestial fix is impossible ...enables you to hold exact position and return to same precise fertile fishing spot on future trips.
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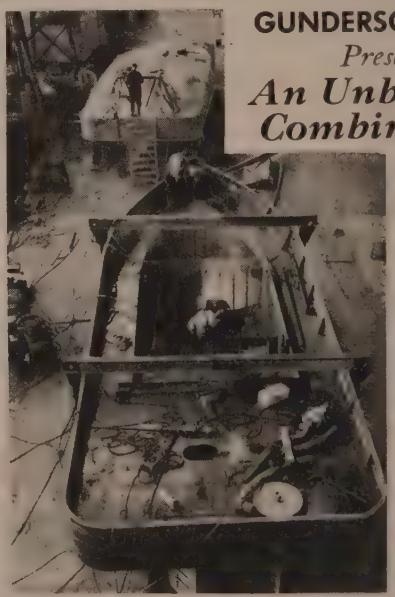

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Presents:
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STEEL HULLS by GUNDERSON
Powered by
G.M. DIESEL ENGINES

Pictured at left are steel hulls in final stages of completion on the ways at Gunderson Bros. Of course the power will be GM Diesel. Gunderson builds stout hulls for any marine use, and supplies GM DIESEL POWER TO FIT!

THE RIGHT DIESEL POWER FOR YOUR JOB
Rugged . . . Dependable . . . Compact
Single GM Units 16 to 275 hp.
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225 N.W. 14th Portland 9, Ore.
2200 W. 6th Eugene, Oregon

MACKEREL LACK URGES SEINERS TO CHILL HOLDS

Because of the disappearance of the mackerel schools off Southern California in the early months of 1954, a number of the smaller San Pedro purse seiners, which normally would devote activity to mackerel operations, last month were installing refrigeration to permit them to go tuna fishing in southern waters.

In early Spring around 40 seiners secured Mexican licenses and had departed for operations below the international border. Many of the large seiners were in operation far below the equator and were reported enjoying considerable success.

Westport and Willapa Improvements Get Funds

Included in $1,548,060 worth of waterfront projects approved by Congress in June for the Twin Harbors area were an additional breakwater at Westhaven fish base, Westport, $326,950, construction of a channel and fish base at Tokeland, $76,500 and an extensive improvement project at the Nahcotta port dock, $474,100.

Indonesians Study Fish

B. Watuseke and W. Soewito, Indonesian district fishery officers, finished a seven-months' training course at the fishery school at Ymuiden, Netherlands; then came to the Pacific coast to study the fisheries here during June. They visited Los Angeles, San Francisco and Seattle ports.

Darmoredjo Soerjoto has been studying fishery technology at the School of Fisheries, U. of Washington; B. B. Lokollo, K. A. Prawira and F. W. Tehupuring have been studying fishery engineering, refrigeration and radio at San Diego junior college.

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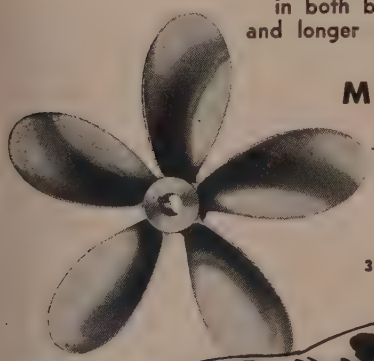
The TRIPLE-LIFE PROPELLERS

Two things contribute to making MICHIGAN propellers last as much as three times as long as those of ordinary bronze — a special alloy that is ALL VIRGIN metal (no scrap whatsoever) and as much as 30% more metal than most competitive wheels of comparable size. Switch to MICHIGAN and you'll get more for your money in both better performance and longer service.



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the wheel that eliminates the vibration that no 3 or 4 blade wheel will cure.

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..There's an Onan Electric Plant the right size and type for craft of every size and purpose . . . shrimpers, trawlers, tugs, workboats of all kinds. They speed work aboard and save time by permitting use of electrical equipment such as bilge pumps, compressors, radios, pressure-water systems and floodlights. Smooth-running and dependable; compact and easy to install. Standard equipment on many new craft. 400 to 10,000 watts, air cooled, A.C., battery charging and dual-purpose units.

Model 5DRP—Two-cylinder, air-cooled Diesel engine. 5,000 watts A.C.

A Model to Fit Your Craft

Model 3DSP 3,000 watts A.C. One-cylinder Diesel.

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Separate Generators 1½ to 60KW

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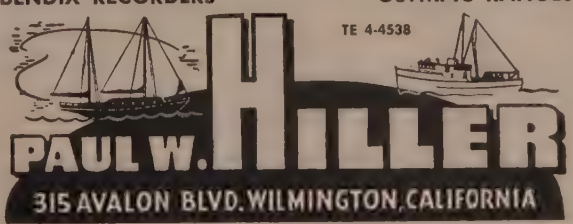

Interest in Standards Sharpens With Progress

Sharpening interest in canned fish standards is evidenced among Pacific fishery technologists generally as result of the apparent approach of official Food and Drug Administration standards for canned tuna, after four years of toil, and the open glances already made toward standards for sardines and salmon.

This was abundantly evident at the recent coast-wide meeting of Pacific Fisheries Technologists at Seattle, and also in discussions with tuna operators and principals of leading packing concerns.

In the development of tuna standards, the industry and the Food and Drug Administration have worked closely together, using the same laboratory on Terminal Island; and have found no really basic points of disagreement.

The three basic factors are Identity, Quality and Fill of Container.

Tuna labels are limited to certain species: yellowtail and bonito are excluded. When canned, determination of identity of species must depend largely on subjective tests.

The present proposals for standards provide for four styles of pack: solid, chunk, flake and grated. The pack is at all time to consist of the clean muscle meat of tuna, free from skin, scales, bones and blood meat. Light and dark meat is to be defined and label designation agreed upon.

The style of pack is, of course, tied-up with fill. Testing is by pressure in can-size cylinder under 413 lbs. per sq. in. Chunk and flake content is measured by means of a ½" screen. Chunk style has at least 50% retained on ½" screen. For grated, more than 50% must pass through the ½" screen. Techniques of determination are well worked-out.

COLOR. (Included with identity). Some problems here are still unsolved. Determination is based on reflection from pressed and ground material, but the instrument used by Food & Drug for this purpose is no longer available commercially. Certain color values will be required for designation as Dark, Light, White. "Dark" is a reading below 5.30 (Munsell units); the breaking point between "light" and "white" is 6.25; that is, Albacore may be so labeled if it meets a color value of 6.25; if below that, it is "light meat", not "Albacore", regardless of species.

FILL OF CONTAINER. A source of difficulty has been the question of standard net weights for the numerous can sizes used, and for the various styles of pack.

Consensus of industry regarding determination of fill is that presscake method is probably the best. In this, the oil is drained off, residue is put under pressure for a certain time in a can-sized cylinder, and the remaining presscake weighed.

A new concept is the proposal by Food and Drug to judge any lot on the basis of the average weight of presscake in a sample of 24 cans. There is some difference in filling, between cans, and also considerable variation in pack from different fish of the same species, from batch to batch, and according to locality, condition of raw fish, etc.

The Hale amendment to the Food and Drug act, signed by the President April 15, is expected to expedite procedure by permitting adoption of standards without the formality of hearing where there is no objection from the industry; and that where objection is raised hearing is confined only to controversial issues.

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● No time is lost here in getting fresh-caught shrimp completely cleaned and into the deep freeze. They're loaded immediately, at the docks, onto Cyclone Flat Wire Conveyor Belts which carry them directly to the storage freezer. The shrimp are constantly drenched with water on the way and are clean when they reach the freezer. The use of Cyclone Conveyor Belts for at-the-docks processing of sea food is increasing . . . to insure fast, low-cost handling that eliminates the spoilage danger.

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LINES and LEADERS

Baker Engineering Awarded Frick Refrigeration Distribution

Baker Engineering Corporation, Los Angeles, San Pedro and San Francisco, has been appointed distributors in California and other parts of the Pacific coast for Frick ice machines and refrigerating equipment.

This concern has been handling the Baker line of equipment for years, but when the eastern factory burned down last year, it was not rebuilt, and no more Baker ice machines are available.

Ben Duncan, Baker Engineering's field engineer, recently returned from a visit to the Frick factory at Memphis. He began his refrigerating career with Frick, first at Dallas, Tex., later at Memphis prior to coming to the coast, where during the past years he has planned the refrigeration in many Pacific coast fishing vessels.

Frick has been building ice and refrigerating machinery for over 100 years, and some of the pioneer Southern California tuna clippers had the equipment installed.

McKay Represents Capitol Gears in Northwest

Harlan McKay has become the new manufacturer's representative in Oregon, Washington, British Columbia and Alaska for the Auto Engine Works, Incorporated, "Capitol" line of marine reverse and reduction gears.

Announcement was made by George P. Torgersen of Auto Engine Works in St. Paul, Minn.

Mr. McKay will make his headquarters at 4110 S.E. Morrison St., Portland. He has had wide experience in the diesel engine field, having been sales manager for Cummins Diesel Sales of Washington, and Northwest regional manager for Buda Company.

Western Waxed Paper Veteran Salesman Dies

T. (Tommy) Canavan, sales representative for Western Waxed Paper Division, Crown Zellerbach Corp., North Portland, Oregon, died recently at his home in Portland at the age of 67.

Canavan became associated with the Western organization in 1925, and serviced frozen food operations in Washington, Oregon, Southern Idaho, and Northern Utah continuously up until his retirement in March, 1952.

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Cold Storage Co., Inc.

PETERSBURG, ALASKA

Ralph Hall, Manager

Commercial

FREEZING and STORAGE

Excellent Facilities for Buyers and Fishing Boats

BAIT ICE

Radio Call KWO 28

GORMAN HEIMUELLER of Meletio Sea Food's *Golden Dipt* division, visiting *Pacific Fisherman's* Los Angeles office recently, reported active sales of *Golden Dipt* as shrimp and fish sticks breading grows on the Pacific Coast.

Neumiller's Firm Named By Bendix in Northern California

Marine Radio Electronics, Fishermen's Wharf, San Francisco, has been appointed exclusive distributor for Bendix marine electronic devices for the small boat field, covering northern California from Morro Bay to the Oregon line, according to Chuck Neumiller, owner of Marine Radio Electronics.

"We have a complete stock of parts, and the service to back up the 22 Bendix marine dealers in northern California", says Chuck.

New Generator Is Specially Suited to Fishing Boats

Onan has a compact, easy-to-install variable speed, battery-charging generator with wall-mount control that has been specially designed for crowded engine rooms of fishing boats where a complete engine-driven generating plant is not practical.

The new Onan variable-speed, 32-volt, two-bearing generator will charge 32-volt, 16-cell lead acid batteries within a speed range of 1750 RPM and 3500 RPM. It starts charging at approximately 1450 RPM and delivers its full output at about 1750 RPM.

Seattle Girl Wins

Miss Patricia A. Shaughnessy, a Seattle high school graduate, was one of three winners of the 1954 Carle C. Conway scholarships, awarded annually by Continental Can Company to children of company employees. They are four-year, $1,000 annual scholarships.

In addition, two special $500 annual scholarships have been awarded to M. Ruth Shellhorn, of Seattle, and Helen V. Andres, of Campbell, Calif.

Jeanneret Named Pacific Manager for P&H Line

Announcement is made by Harnischfeger Corporation, Milwaukee, of the appointment of Thomas J. Jeanneret as General Manager of the P&H Pacific Division, succeeding Ralph D. Holcomb who died July 18.

His appointment is effective immediately, and he will have direct responsibility for all sales activities in Los Angeles and the 11-state territory served by the Pacific Division of Harnischfeger Corporation.

Paul Diefenderfer, it is also announced, has been appointed manager of all plant, service and repair parts operations in the Pacific Division.

Wich and Andrews Advance With Kermath Engine Firm

Major changes in its executive personnel have been announced by Kermath Manufacturing Company, Detroit, a subsidiary of Barium Steel Corporation. Kermath, which manufactures the world's widest range of gasoline and diesel marine engines, has appointed Don A. Wich as its new general manager and made him a vice president of the firm. Mr. Wich has been with Kermath since 1940 and is widely known throughout the marine engine industry. In his early years with the company, he specialized in efficiency studies, worked in various other capacities through the mid-forties, and then headed up the purchasing division.

At the same time, E. P. "Ted" Andrews was named general sales and advertising manager. Andrews, who came from New York earlier this year to strengthen the Kermath sales department, has 30 years' experience in various fields of general marketing and selling, and has a thorough knowledge of the marine field.

In announcing these new appointments, Kermath also reports that Herbert E. Schreiner, who is well-known throughout the industry and has been associated with Kermath for many years, continues as a vice president specializing in engineering and production.

Canco Adds Facilities

American Can Company has started construction of a new lithographing and warehousing building adjacent to its Pacific factory in San Francisco as the latest in a series of recent expansion projects. Another new installation is a milk carton producing unit at the Canco Stockton factory.

C. W. Roberts, Pacific Division vice president, said the new multi-million dollar San Francisco plant building "is an expression of American Can Company's confidence in the future of the California canning industry and the state's economy as a whole."

Raytheon at Sanak

Roger W. Mackay, district manager at Seattle, Raytheon Manufacturing Co., announced the Sanak Trading Post, Pauloff Harbor, Alaska, has been named as marine dealer to become the most far-flung Raytheon dealer in North America.

KOHLENBERGER ENGINEERING CORPORATION

DEPENDABLE REFRIGERATION SINCE 1922 — FULLERTON • CALIFORNIA

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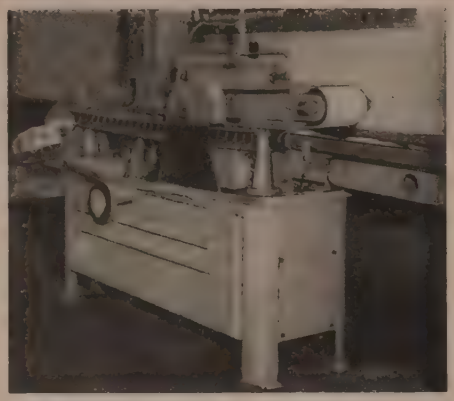

The PAK-SHAPER

PREFERRED BY LEADING TUNA CANNERS!

Introduction of the PAK-SHAPER in 1949 developed in tuna canning a greater mechanization than had come about in 30 years of previous growth. Subsequent experience has proved its value to the industry. A large percentage of major tuna operators now employ the PAK-SHAPER.

The PAK-FORMER, designed exclusively for Chunk and Grated Style Pack, is now available to the tuna industry under similar terms as the PAK-SHAPER.

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Marine Railways, Floating Drydock

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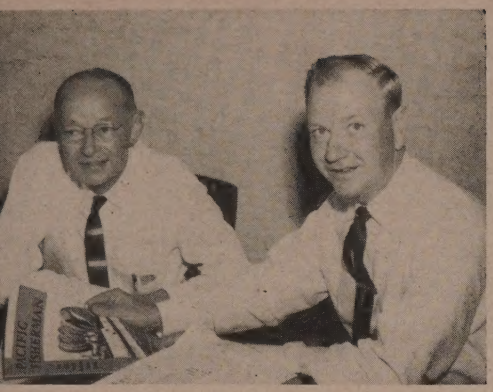

BUDA DIESEL distribution in Southern California is handled by these partners in Anderson-BeVier Co., J. D. BeVier, left, and A. A. Anderson, who is keeping his hand in with *Pacific Fisherman.*

nderson and BeVier ndle Buda Distribution

. D. BeVier, left, and A. A. Anderson, e partners in the newly formed firm Anderson-BeVier Co., Inc., distributors Buda engines, Los Angeles, with anch offices in Long Beach and Bakersld.

Mr. Anderson has been in the employ the Buda Company for a number of ars, serving for the past two years as est Coast Regional Manager. Mr. BeVier s been serving in the capacity of Manar of the California Stores of the Buda mpany and Assistant General Manager the California branches.

The Buda Company has recently deloped a series of light-weight diesel enes for use in the marine field. The w firm has plans for appointing marine alers in San Diego and Los Angelesng Beach harbors.

de Water Associated Oil cquires Star and Crescent

Tide Water Associated Oil has expanded direct sales territory in Southern Calirnia by acquiring the petroleum distrition facilities of Star and Crescent Oil mpany in San Diego.

Properties acquired include oil distribing plants, a marine service station, and a chain of 42 service stations.

Star and Crescent Oil Company, organized in 1922 by Oakley J. Hall and Ralph Chandler, has been the exclusive distributor of Tide Water's products in San Diego County since that time. The company, in disposing of its oil distributing facilities, will confine its activities to its transportation, shipbuilding, and other interests in San Diego.

Wark said his company would supply its products directly to former commercial, agricultural, and industrial customers of Star and Crescent Oil; that present arrangements with service station operators would continue; and that all Star and Crescent employees would have an opportunity to become members of the Tide Water organization.

Tide Water Associated Oil Company is a completely integrated unit in the petroleum industry, engaged in the production, refining, transportation and sale of crude oil and its products.

Ray M. Kennett has been appointed to head Tide Water's new organization in San Diego.

E. W. Lockwood, Wilbur-Ellis Co., San Francisco, is back at his desk after a trip to Norway, England, and other western European countries.

Canadians Sight Record Kill for Whale Guns

B. C. Packers officials hope that by the end of the six months season at least 650 whales will be taken. This would be the largest number in many years, if not a record for British Columbia.

B. C. Packers whaling operations are under the general direction of R. E. Walker, vice president, and Dr. Roy Elsey, director research. H. M. Cowie is manager of the plant at Coal Harbor.

In addition to other products, more than 520,000 U. S. gallons of whale oil had been extracted at Coal Harbor this season up to the end of July.

H. G. McKinney, California Engine Dealer, Passes Away

H. G. McKinney, for many years associated in the marine engine sales and service of Southern California, passed away in late July.

For some years, Mr. McKinney was active in Chrysler marine engine sales at his office in Wilmington, Calif. During the past few years he represented Chris Craft engines and Nordberg marine engines and was associated with Ken Wilson of Newport Beach in Chris Craft Boat Sales. He is survived by his wife, and his son H. G. McKinney Jr., who has been with him in his office for some years.

* * *

Mineo Bros., well known Monterey purse seiner, Frank Mineo, managing partner, has been chartered to the F. Alioto Fish Co., San Francisco, to act as a salmon pickup boat. Alfonso Mortarello is skipper.

Dominic Tringali, San Francisco, has installed a Bendix Depth Recorder, purchased from Shore Line Diesel Maintenance, Fishermen's Wharf, San Francisco, on his boat **Danna T.**

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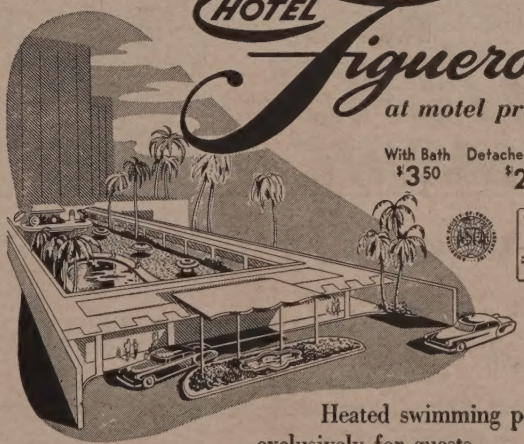

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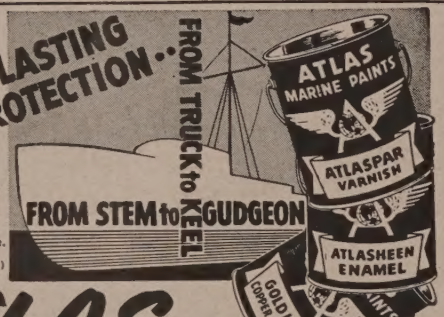

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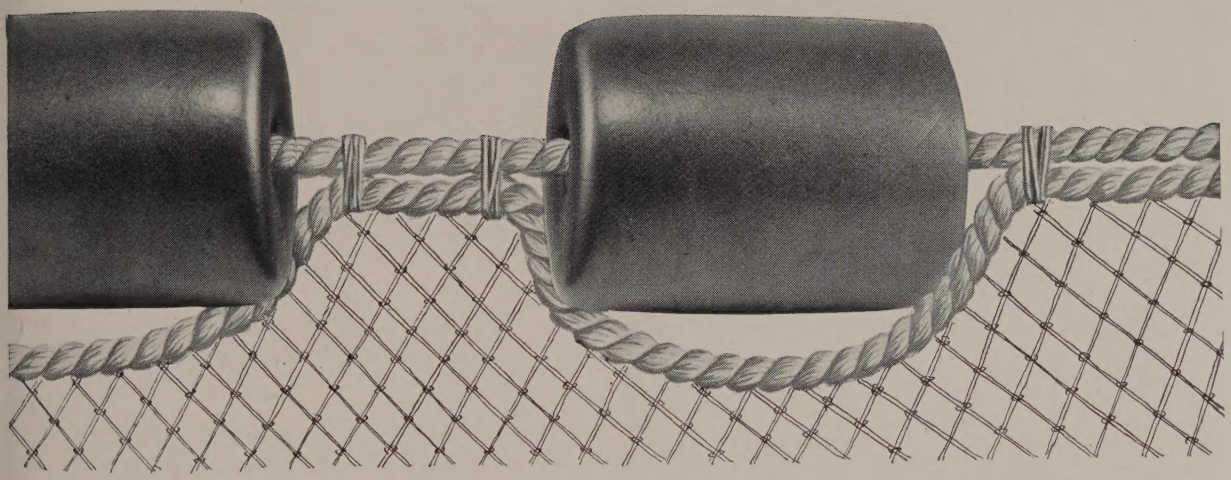

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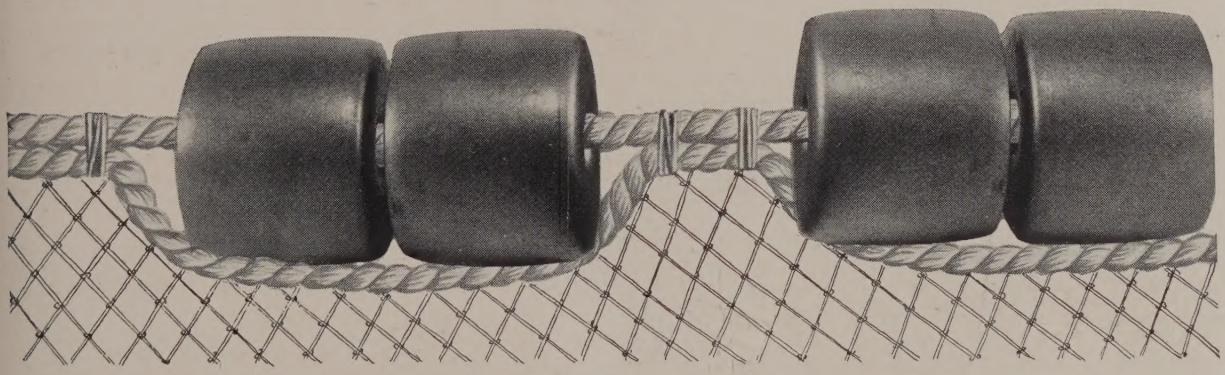

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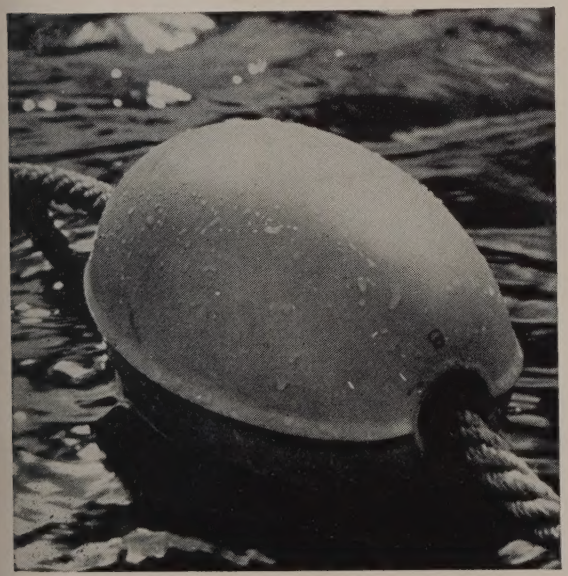

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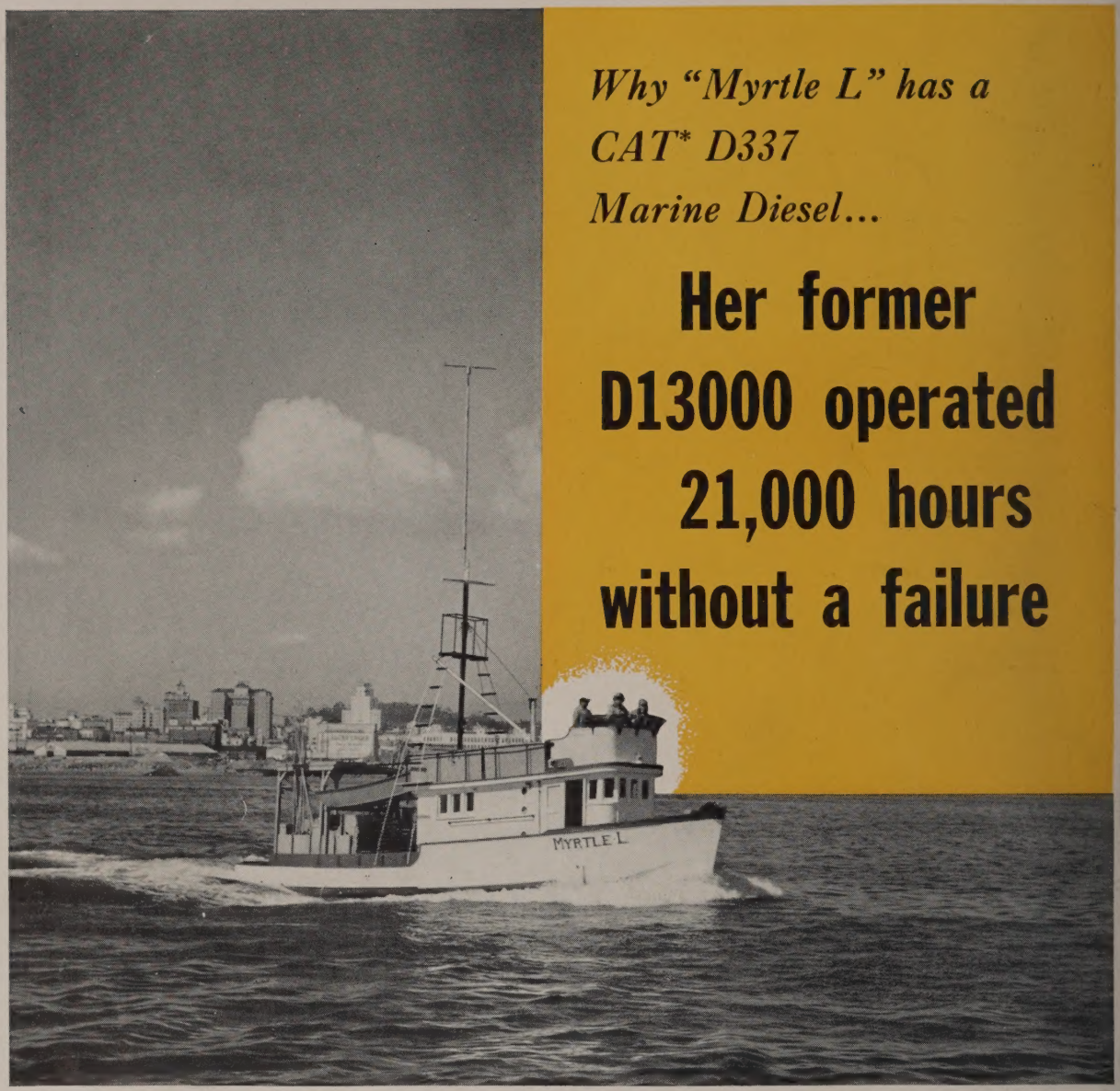

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